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A TRAIL MANUAL

for the
EAST BAY REGIONAL PARK DISTRICT

A TRAIL MANUAL



Prepared by Jana Olson, Trails Coordinator, and Hanson Hom

We are grateful to the following organizations and persons who contributed their time and help in working it all out:

The East Bay Area Trails Council
The East Bay Bicycle Coalition and member groups
The Trails Subcommittee and the Master Plan Implementation
Subcommittee of the Park Advisory Committee
And all the other staff members of the District

Adopted by the Board of Directors
October 5, 1976

Introduction

"The District, in coordination with other governmental agencies in the two counties, will acquire, develop, and operate a Regional Trail System with the overall objective of providing a comprehensive system of trails both through and connecting its parklands with each other and with other trail systems, and the urban communities. To this end, the Two-County Regional Trail Plan adopted by the District June 20, 1972, will be regularly reviewed and updated.

The District will actively promote coordination with other governmental bodies in the two counties so that acquisition, development, operation, and use of regional trails may be accelerated, so long as the overall objectives of the Overview-Task Force plan are met. A more detailed policy on such a coordinated effort will be prepared after consultation with other involved governmental bodies."

-- "Trail Policy," EBRPD Master Plan, p. 30.

Since 1934, when the East Bay Regional Park District was founded, it has been providing parks and recreation facilities for the East Bay. Trails, especially those for hikers and equestrians, have always been a part of the parks the District operates. Bicycling has become more popular, and now is included in the District's trails system. Also, the needs of special groups such as the handicapped must be integrated into trail planning.

In the last few years, the District has seen the need for an extension of the trails system beyond the boundaries of the individual parks. These "Regional Trails" will provide access to and between Regional Parks, for hikers, equestrians, and bicyclists. In 1973, the District adopted a Master Plan, and provisions for such a Regional Trails System were included in the Plan.

This Trails Manual has been written to supplement the Master Plan, and provide information necessary to the development of trails inside and outside the Regional Parks. The Manual covers trails for hikers, equestrians, bicyclists, and service vehicles, and discusses all aspects of these trails, from planning through maintenance. The Manual is separated into two major sections: the first section is Administration, which covers all the planning, acquisition development, and maintenance procedures; the second, Design and Construction Standards, contains all the specifics on building the trails.

The Regional Trails Plan map showing existing and proposed Regional Trails, is included at the end of the Manual.

The trails system includes trails for hikers, horsemen, and bicyclists, across many types of terrain and land use. Although we have tried to be as thorough as possible, it is difficult to cover every situation. Therefore, this Manual should be taken as a guide, rather than a formula.

Table of Contents

DEFINITIONS	1
-----------------------	---

SECTION ONE: ADMINISTRATION

PLANNING PROCEDURES

A. Parkland Trails	7
B. Regional Trails	9

DEVELOPMENT PROCEDURES

A. Funding of Trails	12
B. Design of Trails	12
C. Construction Procedures	13

MAINTENANCE PROCEDURES

A. Responsibilities	14
B. Maintenance Standards	14
C. Trail Closures	15

OPERATIONS PROCEDURES

A. Public Relations	17
B. Public Safety	17
C. Reservations	17
D. Coordination with Other Agencies	18
E. Appeal Procedure	18

SECTION TWO: DESIGN AND CONSTRUCTION STANDARDS

REGIONAL TRAIL RIGHT OF WAY DESIGN STANDARDS

A. Right of Way Width Standards	21
B. Types of Right of Way Agreements	21
C. Route Choice Considerations for Regional Hiking & Riding Trails	22
D. Route Choice Considerations for Regional Bicycle Trails	23

HIKING AND RIDING TRAIL DESIGN STANDARDS	26
--	----

BICYCLE TRAIL DESIGN STANDARDS

A. Class I Bike Routes (Bike Trails)	40
B. Class II and III Bike Routes	45

SERVICE TRAIL DESIGN STANDARDS	48
--	----

SIGNING STANDARDS	55
-----------------------------	----

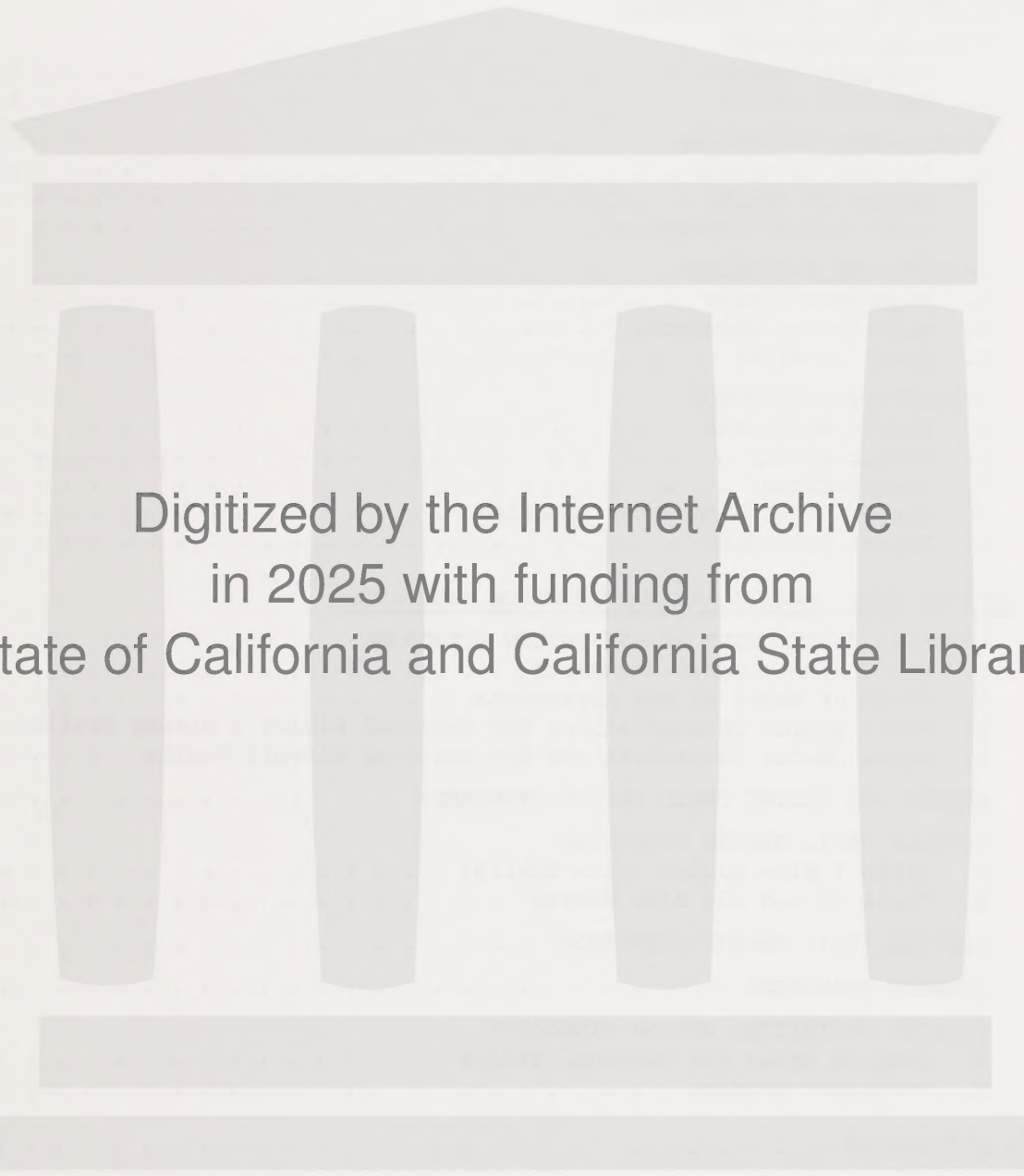
RELATED FACILITIES DESIGN STANDARDS

A. Staging Areas for Regional Trails	61
B. Overnight Camping	61

BIBLIOGRAPHY	66
------------------------	----

APPENDIX: REGIONAL TRAILS PLAN	
--------------------------------	--

inside back cover



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Definitions

Acquisition Evaluation: Step 1 of the Parkland Planning Sequence. See page 7.

Bike Routes: These three types of Bike Routes are commonly defined in California:

- | | |
|--|---|
| Class I Bike Route:
(Bike Path, Bike Trail) | A bike path is a special pathway facility for the exclusive use of bicycles, which is separated from motor vehicle facilities by space or a physical barrier. A bike path may be on a portion of a street or highway right of way or on a special right of way not related to a motor vehicle facility; it may be grade separated or have street crossings at designated locations. It is identified with guide signing and also may have pavement markings. |
| Class II Bike Route:
(Bike Lane) | A bike lane is a lane on the paved area of a road for preferential use by bicycles. It is usually located along the edge of the paved area or between the parking lane and the first motor vehicle lane. It is identified by "Bike Lane" or "Bike Route" guide signing, special lane lines, and other pavement markings. Bicycles have exclusive use of a bike lane for longitudinal travel, but must share it with motor vehicles and pedestrians crossing it. |
| Class III Bike Route:
(Shared Route) | A shared route is a street identified as a bicycle facility by "Bike Route" guide signing only. There are no special lane markings, and bicycle traffic shares the roadway with motor vehicles. |

Board: The Board of Directors of the District, an elected seven-person group.

Capital Improvements Plan: Step 4 of the Parkland Planning Sequence. See page 8.

CEQA: The California Environmental Quality Act, the law which requires the assessment of environmental effects through the preparation of an EIR. *

EBATC: The East Bay Area Trails Council, a group composed of trail users and representatives of other governmental bodies involved in trail development.

EBBC: The East Bay Bicycle Coalition, a group composed of representatives of other East Bay area bicycling clubs.

* Detailed information on CEQA requirements and EBRPD compliance procedures is found in the Environmental Review Manual of the District, adopted May 1976.

EBRPD or District: The East Bay Regional Park District

EIR: Environmental Impact Report, a document prepared to assess the negative and positive environmental effects of a project.*

Hiking and Riding Trails: Trails developed for the use of hikers and equestrians only.

Hiking Trails: Trails developed for the exclusive use of hikers.

LUDP: Land Use-Development Plan, the third Step of the Parkland Planning Sequence. See page 8.

MUTCD: Manual on Uniform Traffic Control Devices, a handbook of standards for Highway signing, published by the Federal Highway Administration.

Negative Declaration: A document prepared to satisfy the requirements of CEQA, when the project has no significant environmental effects.*

PAC: Park Advisory Committee, an appointed citizens' group which reviews park projects and advises the District on various matters.

Parkland Trails: Those trails, for hikers, equestrians, bicyclists, and service and fire vehicles, which are located within the boundaries of a Regional Parkland.

Regional Trails: Those trails, for hikers, equestrians, and bicyclists, which are developed outside the boundaries of a Regional parkland. A complete definition, from the District's adopted Master Plan, is reprinted on the next page.

Resource Analysis: Step 2 of the Parkland Planning Sequence. See page 7.

Service Trails: Trails or roads developed within the Regional Parks for service or fire vehicle access. These are also used by hikers, equestrians, and bicyclists.

Staging Area: An area at the beginning and ending of a trail, for parking mainly, but may provide additional facilities. See Master Plan quote on the next page, defining Regional Trail.

* Detailed information on CEQA requirements and EBRPD compliance procedures is found in the Environmental Review Manual of the District, adopted May, 1976.

The following Regional Trail definition is from the adopted Master Plan. The wording shown in *Italics* is a quote from the Master Plan, and that in regular type is revised wording. (*Italic type is used throughout this report for quotes from the Master Plan.*)

A. *PARKLAND CLASSIFICATION POLICY*

REGIONAL TRAIL

Purpose

A Regional Trail is a linear parkland established primarily for the recreational activities of walking, hiking, bicycling, and horseback riding.

Minimum Standards

For an area to be considered suitable for designation as a Regional Trail (internal park trails which are not part of the Regional Trail plan excluded), it must possess the following characteristics:

- 1. There must exist a potential linear corridor of regional significance, to be designated a Trail Link for planning and management purposes. Each Trail Link must accomplish at least one of the following goals:*
 - a. It may provide non-motorized access to a parkland of regional scale (such as those provided by the East Bay Regional Park District, the East Bay Municipal Utility District, the California State Park System, or the National Park Service) from a major population center or mass transit terminal.*
 - b. It may provide a connection between parklands of regional scale (as defined in "a." above), especially where overnight camping is provided in those parklands.*
 - c. It may provide a day use loop or link through other regionally significant scenic lands, either inland or along the shoreline.*
- 2. There should be adequate land area available at strategic locations along the trail link suitable for staging and/or compatible trail recreational activities, to be designated a Trailhead for planning and management purposes.*

Planning and Management Guidelines - Trail Link

- 1. Each Trail Link should be clearly marked with signs. Where the Trail is to be used exclusively by a particular type of user(s), the Trail Link should be clearly designated and should be equipped with signs or barriers to prevent the entry of incompatible activities.*
- 2. The trail modes may¹ be consolidated within the same corridor² ... Hiking-bicycling and hiking-equestrian are often "compatible paired activities," depending on the width, steepness, frequency of use, and*

1. "should" changed to "may."
2. "wherever feasible" deleted.

other conditions of the trail. Before being paired, these elements should be carefully considered. Where they are incompatible, paths should be kept separated, although they may share a common corridor.

3. The Trail Link should be at least wide enough to accommodate the designated users. Where a somewhat wider feature such as a canyon, narrow valley, ridge, plateau, or flood plain creates a linear area that is focused on the site of the Trail Link, if feasible the Trail Link should encompass its entire width. This will guarantee protection of the area and provide trail-related open space along the trailway.

Planning and Management Guidelines - Trailhead

The areas along the Trail Link to be used for staging ...¹ purposes should be designated as Trailheads. Within a Trailhead, the following guidelines should apply:

1. Trailheads should be located at strategic access points along a Trail Link. If the Trailhead is situated within another regional parkland, it should be clustered with other developed recreational facilities. It is preferable to locate Trailheads within other recreational facilities whenever possible, as these generally already provide the necessary facilities.
2. The Trailhead should be developed with facilities adequate and appropriate for users of the Trail Link.² Developed facilities might include elements such as parking areas, ...² equestrian center, sanitary facilities, drinking fountains, picnic areas, shelters, and trailhead signs.
3. The trailhead, particularly along the shoreline, may contain additional facilities not primarily oriented toward trail users, such as playing fields, fishing areas, or landscaped areas, if these facilities do not conflict with the primary purpose and goals of the Trailhead.
4. The primary management objectives should be to provide for the needs of the trail users and to serve as an entry point to the Regional Trail System. Moreover, within urban areas and especially along the bay shoreline, portions of Trailheads can provide some degree of relief from the urban scene by providing a small area of natural quality.
5. Rest areas should also be provided between the Trailheads at places with aesthetic qualities, viewpoints, and at the end of long, uphill stretches. Additional space may be acquired for this purpose, and additional facilities such as trail maps, water, hitching rails, or bicycle racks may be provided.

1. "rest and relaxation" deleted.
2. "Youth hostels" deleted.

SECTION ONE: ADMINISTRATION

PLANNING PROCEDURES:

A. Parkland Trails

Planning for changes in the trails network for the existing parks is part of the continuing planning process for each park. The Master Plan of the District contains a Parkland Planning Sequence, delineating steps to be followed in the planning of new and existing parks. The circulation element of the Land Use Development Plan includes trails for hikers, bicyclists, and equestrians, as well as service and fire trails.

The Parkland Planning Sequence from the Master Plan is reprinted below in *Italics*; the wording in regular type between each step is the process which has been developed by the Planning Department to carry out the Sequence.

(Note: Existing parklands begin at Step 2: Resource Analysis.)

PARKLAND PLANNING SEQUENCE

STEP 1: ACQUISITION EVALUATION: Each proposed parkland site (expansion or new parkland) will have an acquisition plan developed to include the following elements: compliance with parkland classification, property boundary determination, preliminary resource evaluation, study of alternate sites in the area for implementing the Balanced Parklands Plan (Page 8), proposed development sequence and cost, proposed maintenance and operation cost and acquisition program.

- A. Planning Department staff gathers information on potential acquisition and prepares an Acquisition Evaluation report.
- B. Environmental Coordinator prepares documents for compliance with CEQA.*
- C. Acquisition Evaluation is presented to Board for adoption and authorization of purchase, and completion of CEQA requirements.*

STEP 2: RESOURCE ANALYSIS: After a parkland site has been acquired by the District, and prior to the development of a land use plan, the District will complete a resource analysis which will identify features of the parkland which have significant resource value as well as provide a Potential plan for vegetation and wildlife management. Where an aquatic element is involved, a water management plan will be included. Guidelines will be established to be used in later planning processes to protect significant natural resources which could be adversely affected by parkland use.

- A. Planning Department Staff does field work, coordinates with other District Staff, and prepares a draft Resource Analysis.
- B. Planning Department circulates a summary of the draft Resource Analysis to Board, Staff, governmental bodies, and interested citizen groups.
- C. Planning Department holds a public hearing on the draft Resource Analysis to solicit comments on it and input for the Land Use Development Plan.
- D. Planning Department Staff prepares final Resource Analysis.
- E. Board accepts the final Resource Analysis.

STEP 3: LAND USE DEVELOPMENT PLAN: The District will, following adoption of the Resource Analysis, prepare a Land-Use Development Plan prior to any major development or provisions for permanent public use of the site. The Land-Use Development Plan will identify natural environment units, preserves, or any other designation within the parkland classification system which will control planning and management of parkland and any recreation or staging cluster within the proposed parkland site. A schematic development concept will be prepared in map form along with supporting narrative.

- A. Planning Department Staff gathers pertinent information, including interviewing other staff members, interested governmental bodies, interested citizens, special interest groups, and input from previous public hearing.
- B. Planning Department Staff prepares draft LUDP/EIR* and reviews it with other staff.
- C. Draft LUDP/EIR is presented to the Capital Improvements Subcommittee of the Park Advisory Committee.
- D. Draft LUDP/EIR is circulated to Board, Staff, governmental bodies, and interested citizen groups.
- E. A public hearing is held on the draft LUDP/EIR to solicit comments.
- F. A final LUDP/EIR is prepared.
- G. Board adopts and accepts the LUDP/EIR.

* Complete information on the requirements of CEQA (the California Environmental Quality Act) and EBRPD compliance procedures are found in the District's Environmental Review Manual, adopted April, 1976.

STEP 4: CAPITAL IMPROVEMENTS PLAN: The District will prepare a detailed Capital Improvement Plan when a parkland development has been approved by the Board and funds for development of a parkland have been budgeted. The Capital Improvement Plan will include a detailed capital facility or site plan to accomplish any improvements or provisions for public use of the site.

Trail improvements may require only minor work, or they may be major capital expenditures. Procedures for designing and constructing trails projects are in the next section.

B. Regional Trails

1. REGIONAL TRAILS PLAN REVIEW PROCEDURES

" . . . The Two-County Regional Trails Plan, adopted by the District on June 20, 1972, will be regularly reviewed and updated."

-- "Trail Policy," EBRPD Master Plan, p. 30.

The first review and update of the Regional Trails Plan was the adopted Master Plan, which included a Regional Parklands map showing a system of regional trails. This Manual is the second review of the Regional Trails Plan. In the future, not less than biennial review and revision of the Plan will be done according to the following:

Trails Coordinator will review the Trails Plan and all policies which relate to Regional Trails.

Trails Coordinator will prepare a draft report of suggested changes.

Trails Coordinator will consult with technical advisors, affected public agencies, District staff, and trail user groups for their recommendations.

Trails Coordinator will complete recommendations and include input received in previous step.

Trails Coordinator will present recommendations to the General Manager who will prepare final recommendations for Board action.

Review and update shall include: revisions to policies governing Regional Trails, revisions and route changes on the Regional Trails map, recommendations for trail priorities for both acquisition and construction, and other recommendations which may be relevant.

2. TRAIL LINK PLANNING SEQUENCE

The lines shown on the Regional Trails Plan are general corridors rather than specific route locations. These corridors serve as the basis for planning. The "Trail Route Planning Sequence" is a variation of the "Parkland Planning Sequence" developed to accommodate the special needs of trail planning. Trails are different from parklands in two significant ways: The use is predetermined, and the location is flexible.

- STEP 1: CORRIDOR STUDY/LUDP/EIR. This step includes the Acquisition Evaluation, Resource Analysis, and LUDP/EIR steps of the Parkland Planning Sequence of the Master Plan.
- A. Corridors to be studied will be selected by their inclusion in the annual acquisition program adopted by the Board.
 - B. Trails Coordinator studies all possible alternate alignments within a corridor. Such study will include consultation with District staff, trail user groups*, local citizens, interested governmental bodies, property owners, and technical advisors.
 - C. Trails Coordinator, in cooperation with other staff, will evaluate alternate routes, based on route design criteria given in the design and construction section of this manual.
 - D. A field trip will be held to allow Board, staff, trail users,* and others interested in the routes to look at the alternate routes. (The East Bay Area Trails Council shall be consulted for matters pertaining to hiking and riding trails, and the East Bay Bicycle Coalition shall be consulted for matters pertaining to bicycle trails.)
 - E. The draft Corridor Study/LUDP/EIR shall be distributed to the Board, staff, trail user groups*, local citizens, property owners, interested governmental bodies, and others.
 - F. A public hearing will be held to review the draft Corridor Study/LUDP/EIR and solicit comments from the public. This public hearing may be held separately or as a part of another meeting.
 - G. A final Corridor Study/LUDP/EIR will be prepared, including comments received on the draft and responses to them.
 - H. After the study process has been completed, a recommendation will be prepared by the General Manager for Board action. If the Board finds that the project should proceed, it will then certify environmental compliance, adopt the project, and authorize acquisition.

STEP 2: ACQUISITION: Acquisition will be completed after the trail route has been adopted. Acquisition policies are given in the Master Plan, especially on pages 41-43. Standards for right of way width are given in the design and construction section of this manual. The Land Acquisition Department is responsible for the acquisition of trails rights of way.

STEP 3: CAPITAL IMPROVEMENTS PLAN. Procedures for the construction of trails projects are given in the next section.

3. MINOR TRAIL ACQUISITIONS

Minor trails, such as feeder trails into a parkland, or bike routes on existing roads, which involve only minor acquisition and construction, and have little impact on the natural or social environments, may be acquired simply by completion of an Acquisition Evaluation. (See Parkland Planning Sequence, page 13.) Trails which do not require an EIR are those which may be acquired in this manner. The District's Environmental Review Manual contains criteria for determining whether a project requires an EIR or a Negative Declaration. Trails which require an EIR should follow the "Trail Link Planning Sequence."

DEVELOPMENT PROCEDURES:

A. FUNDING OF PARKLAND AND REGIONAL TRAILS

1. Funding Sources: The District has twenty cents (20¢) per \$100 assessed valuation tax rate. The original rate was ten cents (10¢), and in 1972, through legislative action, the rate was doubled. The original ten cent tax forms the District's General Fund, which is used to develop and maintain parklands and trails existing prior to 1972. The new ten cent increase is used for the acquisition and development of lands acquired after 1972, and is called New Money. This New Money is legally limited to be spent eighty percent (80%) on acquisition and twenty percent (20%) on development until 1982.
2. Capital Projects: Appropriations are made for these projects as part of the yearly budgeting process, or by special Board appropriations. Trail projects on lands acquired prior to 1972, are funded from the general fund; trails on lands acquired after 1972 are funded from the new money.

Capital projects exceeding \$3,500 must be submitted to competitive bid and the preparation of bid documents and bidding process are handled by the Planning and Design Department.
3. Donations: Trail user groups have often donated time, materials, and funds to develop trails. These donations have been extremely helpful in the construction of the trails system, especially on those trails which require a lot of hand work, and few structures.

B. DESIGN OF PARKLAND AND REGIONAL TRAILS

1. Major Projects: The Design Section of the Planning and Design Department has the primary responsibility for the design of Capital projects. On Trails projects, the Design Section works with the Trails Coordinator and members of the Planning and Interpretation Department to insure an acceptable trail design. Design shall be done according to the standards contained in the second section of this Manual.
2. Minor Projects: Design of small trails projects, including route flagging, may be done by the Design Section of the Planning Department, the Trails Coordinator, or the Zone Manager or Park Supervisor. Routes and structures shall be reviewed and approved by the Planning

and Design Department prior to construction of the trail improvements. Design shall be done according to the standards contained in the second section of this Manual.

C. CONSTRUCTION PROCEDURES FOR PARKLAND AND REGIONAL TRAILS

1. Major Projects: Construction of capital projects requires the preparation of working drawings, bid documents, and specifications. The Design Section of the Planning and Design Department is responsible for the preparation and administration of the bidding process. A contractor will be selected to do the work under the supervision of the Construction Inspectors in the Planning and Design Department. Construction will follow the standards in the second section of this Manual.
2. Minor Projects: Trail projects costing less than \$3,500 will be done by District crews, by volunteers under the supervision of District personnel, or by contractor (without bid). Trails will be built by the crew of the park in which they are located unless the project requires heavy equipment, in which case the Roads and Trails Crew will do the construction. The Roads and Trails Crew may work on other parkland trail projects in cooperation with the Park Supervisor when time permits and the park crew requests such assistance.

Construction will follow the standards in the second section of this Manual.

MAINTENANCE PROCEDURES:

A. RESPONSIBILITIES

1. Parkland trails are the maintenance responsibility of the park supervisor. Maintenance may be done with park crews, by contract, or by special crews, or volunteer groups. The park supervisor may request maintenance help from the Roads and Trails Crew when the necessary maintenance involves heavy equipment. Maintenance assistance from other special crews (such as the Senior Boys, or Conservation Corps) may be requested when the park crew cannot complete the necessary maintenance.
2. The Zone Manager of each Zone will delineate maintenance responsibilities for Regional Trails*within the zone. The maintenance will be done by appropriate park supervisors, as above.
3. Notifications of trail maintenance problems from park users shall be transmitted to the supervisor responsible for the trail.
4. A yearly inventory of all trail maintenance, including drainage, vegetation clearing, signing, surfacing, and repair of structures, gates and fences, should be done in late winter or early spring. It is desirable to complete needed maintenance prior to the heavy summer use period.

B. MAINTENANCE STANDARDS

1. Hiking and Riding Trails:

Clear new vegetation growth, and remove obstructions when necessary. Corrective work for drainage or erosion problems should be done immediately. Replace stolen, damaged, or obsolete signs as soon as possible. Repair damaged structures as soon as possible. Damaged gates and fences should be repaired immediately.

2. Bicycle Trails:

All of the above requirements for hiking and riding trails must be met, plus:

Paved surfaces should be swept clean often enough to keep it free of

loose gravel, broken glass, and other litter.

Repair broken or damaged pavement as soon as possible.

Regrade unpaved bicycle trails when necessary to keep them as smooth as possible.

To protect the hard, smooth surface desirable for bicycling, keep vehicles and horses off paved and unpaved bicycle trails wherever possible.

3. Fire and Service Trails:

All of the requirements for hiking and riding trails must be met, plus: Service trails should be scraped only when absolutely necessary, as determined by the Fire Chief, in cooperation with the Zone Manager. The goal of service trail maintenance is to keep the trail usable by service and fire vehicles, while making as little impact on the natural environment as possible.

To preserve fire and service trails, they should not be used during the rainy season except for emergencies. Any damage done during the rainy season should be repaired immediately.

C. TRAIL CLOSURES

1. Temporary Trail Closures:

Ordinance 38, Section 907, provides for the closure of areas in the District in emergency situations. On Regional Trails, there are four possible reasons for temporary closure of a trail or section of trail: during construction of the trail; when a high fire hazard exists in the area; when a hazardous condition exists on the trail; and during periods of very wet weather.

In the case of high fire hazard, the Fire Division of the Public Safety Department shall monitor weather conditions and determine when park and trail closures are necessary. The process for fire hazard closure is set forth in detail in "Administrative Policy Regarding Fire Closure" (EBRPD Public Safety Department, August 27, 1973).

If a trail is determined to have a hazardous condition, such as a landslide or washout, it may be closed until the hazard is repaired. Any staff person may make a request to the appropriate Park Supervisor to have a trail closed for this reason. The Park Supervisor shall make the decision whether or not to close the trail.

A trail may also be closed during periods of heavy rains if the trail tread becomes dangerously slippery, or if use of the trail while the surface is wet would result in serious damage to the trail. It is especially important to keep vehicles off service trails during the rainy season except in emergencies.

If a trail is closed for any reason, word shall be circulated to the Public Safety Department, the Parks and Interpretation Department, the Public Information Department, and the Trails Coordinator. The trail shall be posted as closed at main entry points, and blocked to use where possible.

Trail closures shall be as short as possible; repair shall be done promptly. The safety of the trail users and the long-term adverse effects to the trail shall be considered before reopening the trail.

2. Permanent Trail Closures:

Short sections of trails may require rerouting, due to landslides or other problems. The original route shall be closed to use when a re-route is provided. The park supervisor, in cooperation with the Trails Coordinator, shall determine when such rerouting is necessary, and will flag and construct it.

The EBATC shall be consulted prior to any permanent closure of an entire trail.

OPERATIONS PROCEDURES:

A. PUBLIC RELATIONS

1. Trail Maps:

The Trails Coordinator and the Public Information Department will cooperate to revise existing park maps to show up-to-date trails information, and to prepare new maps of Regional Trails as they are developed. Trails maps will be provided which give routes, rules, emergency information, and other pertinent information.

2. Role of Citizen Groups:

The District will work with interested trail user groups and elicit their support and review of the trails program. Also, user groups will be encouraged to help in the planning, design, construction, maintenance, and publicity of the trails program.

B. PUBLIC SAFETY

"The District will provide for the safety and protection of parkland users as well as protection for the natural features, structures and facilities, public health and property of citizens within its parklands. This public safety responsibility shall include both police and fire services."

-- "Operational Policies: Public Safety Policy," EBRPD Master Plan, page 35.

The Public Safety Department has the primary responsibility for the patrol of all trails; on Regional Trails outside of park boundaries, cooperative agreements with local public safety departments may be formed to help in trails patrol.

C. RESERVATIONS AND SPECIAL ARRANGEMENTS

1. Existing Group Camps:

The District operates many reservable group camping sites. These are open to organized youth and adult groups on a first-come, first-served basis. The Reservation Clerk in the Parks and Interpretation Department handles all reservations.

2. Temporary Camp Sites:

When regular permanent group sites are filled, temporary sites may be reserved for camping use by an organized group. A trailer, containing

water, toilets, and barbeques is available for this purpose. The Reservations Clerk handles all reservations for this trailer. The site used must be approved by the Park Supervisor.

3. Special Arrangements:

A group which is making a request for a major trail-related event, such as a competition ride, a bicycle rodeo, or use of a trail by a group of handicapped persons, should contact the Assistant General Manager, who will give written permission for the requested activity or refer the request to the appropriate person.

D. COORDINATION WITH TRAILS PROJECTS OF OTHER AGENCIES

1. Other agencies, especially local park districts, are involved in trails construction. The District may participate in any trails project which is a part of the adopted Regional Trails Plan. Co-operative projects between agencies are encouraged when the project is a part of both agencies' Master Plans. Delineations of responsibilities for funding, design, development, and maintenance will be made on an individual basis.
2. During the times when the Trails Plan is revised, when Land Use-Development Plans for each park are being considered, or when a Corridor Study for a Regional Trail is underway, consultation with other agencies shall take place to ensure a mutually acceptable trail route.
3. Trails proposed by other agencies to tie into Regional Trails or parks shall be considered on an individual basis; generally, this District encourages such connection with local facilities.

E. APPEAL PROCEDURE

In the event that a trail user group is not satisfied with District procedures, cooperation of District staff, or facilities provided by the District, and following reasonable attempts to resolve the problem with in-park staff and the District's Trails Coordinator, the following appeal procedure shall be followed:

1. Problems relating to existing trails should be presented to the Chief of the Parks and Interpretation Department for review and action.
2. Problems relating to proposed trails should be presented to the Chief of the Land Acquisition Department for review and action.
3. Unresolved problems (from Steps 1 and 2) shall be presented to the Assistant General Manager, who will be responsible for determining what course of action should be followed to obtain a final answer.

SECTION TWO: DESIGN & CONSTRUCTION STANDARDS

DESIGN STANDARDS:

Regional Trail Rights-of-Way

A. RIGHT OF WAY WIDTH STANDARDS

"The Trail Link should be at least wide enough to accomodate the designated users. Where a somewhat wider feature such as a canyon, narrow valley, ridge, plateau, or flood plain creates a linear area that is focused on the site of the Trail Link, if feasible, the Trail Link should encompass its entire width.

This will guarantee protection of the area and provide trail-related open space along the trailway."

-- "Regional Trail, Planning and Management Guidelines, Trail Link," EBRPD Master Plan, Page 20.

Ideally, the trails should form linear parks and in many areas, it will be possible to acquire wide rights-of-way. If a man-made or natural corridor exists, the entire corridor should be considered for acquisition. In places where a natural corridor does not exist, a right-of-way should be acquired wide enough to provide a buffer between the trail and adjacent development. A width of 50 feet to 100 feet is desirable. There is no maximum width.

Many trail routes will pass through land which is already developed. In such areas, where space is limited, the trail corridor may be narrower. The right-of-way should always be wide enough for safe passage of users, for signing, fencing, and the possibility of landscaping. For a single-use or double-use trail, these restricted rights-of-way should be no narrower than 20 feet. A right-of-way for all three uses (hiking, riding, bicycling) should be no narrower than 40 feet, to allow separation of users. Obviously, such narrow corridors provide access but do not create a linear park.

B. TYPES OF RIGHT OF WAY AGREEMENTS

The District may acquire necessary rights of way by purchase of fee title, by easement, or by agreement (use permit, license, contract). Acquisition by purchase will conform to the Acquisition Policy of the Master Plan and all purchases will be documented by grant or deed recorded with the County Recorder. Agreements may or may not be recorded. Most acquisitions will

be from private owners, and most agreements will be with public agencies. The two are discussed separately.

1. Rights-of-Way on Publicly Owned Lands

Agreements should be as long term as possible. (Trails which receive National status must have a ten-year minimum term.) Revocable permits should be avoided. Where this is not possible, the right to revoke the permit should be available to both parties, upon sixty (60) days written notice. Renewal procedures should be specified. Responsibility for liability resulting from trail activity and use may be assumed by the District. Agreements should contain minimal restrictions regarding design, construction, and operation of the trail. Reasonable restrictive requirements may include installation of gates, fencing, landscaping, signs, and other minor construction specifications.

Specific right-of-way requirements vary with the type of trail and the topography. The standards are discussed in "Design Standards: Right-of-Way Standards." Generally, if the public property is a linear space such as a creek or canal, an agreement covering the full corridor width is preferred. If the trail is across open land, a route must be defined, and may be simply a location map attached to the agreement. In the latter case, provisions for necessary minor trail rerouting must be included within the agreement.

2. Rights-of-Way on Privately Owned Lands

Fee simple is the most desirable form of title for acquisition from private owners. Fee ownership allows management and operating flexibility which may not be guaranteed in easements. The property rights may be acquired by purchase or donation of right-of-way, by dedication of rights-of-way during development, or by condemnation. Donations of right-of-way will be encouraged. Also, the District will cooperate with cities and counties by accepting usable trail rights-of-way which are part of the Regional Trails Plan created by park dedication ordinances and by condition of subdivisions.

C. ROUTE CHOICE CONSIDERATIONS FOR REGIONAL HIKING AND RIDING TRAILS

"A Regional Trail is a linear parkland ..."

-- "Regional Trail: Purpose," EBRPS
Master Plan, page 20.

The linear parkland concept is the ideal for Regional Trails. The trails should not only provide access to and between parklands, but also be a recreational experience. These policies apply specifically to hiking and riding trails, and should be followed to achieve the linear park goal:

1. Choose trail routes to maximize the use of open spaces, parks, and natural areas.
2. Choose trail routes to employ existing linear rights-of-way, such as creek channels, power line rights-of-way, etc.; these rights-of-way can often accommodate trails.
3. Coordinate trail routes with local agency plans to connect local park and recreation facilities, and to serve additional local needs.
4. Encourage joint-agency projects, and promote the inclusion of trails within larger projects of other agencies, such as flood control channels, etc.
5. Acquire enough land to provide scenic amenities and a buffer zone between the trail and adjacent lands.
6. Preserve existing vegetation by removing only as much as necessary to accommodate the trail.
7. Design trails with minimum environmental impact; follow the construction guidelines described in the "Design Standards: Riding and Hiking Trails."
8. Use signing sparingly; design signs to blend with surroundings.
9. Avoid structures; where structures are necessary, design them to blend with the surroundings.
10. Work with adjacent property owners to assure a mutually compatible design.
11. Design the trail to require as little maintenance as possible over the long run.
12. Separated grade crossings are highly preferable to ongrade crossings. Where separated crossings are not possible, the ongrade crossings must be carefully designed for maximum trail user safety.

D. ROUTE CHOICE CONSIDERATIONS FOR REGIONAL BICYCLE TRAILS

The bicycle trails element of the Regional Trails System requires some additional design considerations. As with hiking and riding trails, the goal is to create a linear parkland. Regional bicycle trails will attract a wide variety of users. Not all bicyclists can be accommodated on every trail; some trails will be more suited for long-distance tourers, while others are more appropriate for family groups.

"Bike Route" is used as a general term to designate all facilities that explicitly provide for bicycle travel in some way or other. These facilities may be classified into the following three types, and these definitions are included to clarify the policies which follow:

Class I Bike Route: (Bike Path, Bike Trail)	A bike path is a special pathway facility for the exclusive use of bicycles, which is separated from motor vehicle facilities by space or a physical barrier. A bike path may be on a portion of a street or highway right-of-way or on a
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special right-of-way not related to a motor vehicle facility; it may be grade separated or have street crossings at designated locations. It is identified with guide signing and also may have pavement markings.

Class II Bike Route:
(Bike Lane)

A bike lane is a lane on the paved area of a road for preferential use by bicycles. It is usually located along the edge of the paved area or between the parking lane and the first motor vehicle lane. It is identified by "Bike Lane" or "Bike Route" guide signing, special lane lines, and other pavement markings. Bicycles have exclusive use of a bike lane for longitudinal travel, but must share it with motor vehicles and pedestrians crossing it.

Class III Bike Route:
(Shared Route)

A shared route is a street identified as a bicycle facility by "Bike Route" guide signing only. There are no special lane markings, and bicycle traffic shares the roadway with motor vehicles.

Class I Bike Route Criteria: Ideally, regional bicycle trails should be Class I routes; however, because of the level of development and the topography of the East Bay, very few places exist where Class I routes of regional significance can be economically developed. Class I routes carry out the concept of "linear parkland" more so than Classes II and III. To implement Class I bike routes, these policies should be followed:

1. Choose trail routes to maximize the use of open spaces, parks, and natural areas.
2. Choose trail routes to employ existing linear rights-of-way, such as creek channels, power line rights-of-way, etc.; these rights-of-way can often accommodate trails.
3. Coordinate trail routes with local agency plans to connect local park and recreation facilities and to serve additional local needs.
4. Encourage joint-agency projects, and promote the inclusion of trails within larger projects of other agencies, such as flood control channels, etc.
5. Acquire enough land to provide scenic amenities and a buffer zone between the trail and adjacent lands.
6. Preserve existing vegetation by removing only as much as necessary to accommodate the trail; ensure that planting is part of trail site design, where appropriate.
7. Design trails with minimum environmental impact; follow the construction guidelines described in the "Design Standards: Bicycle Trails."
8. Use signing and striping sparingly; design signs to blend with surroundings.

9. Avoid structures; where structures are necessary, design them to blend with the surroundings.
10. Work with adjacent property owners to assure a mutually compatible design.
11. Design the trail to require as little maintenance as possible over the long run.
12. Separated grade crossings are highly preferable to ongrade crossings. Where separated crossings are not possible, the ongrade crossings must be carefully designed for maximum trail user safety.
13. A Class I route should be routed to make as few intersections with auto traffic as possible.
14. Where a trail corridor accommodates hikers and/or equestrians in addition to bicyclists, separate paths should be provided for hikers and equestrians.
15. Class I bicycle routes should not be visible from a road which offers an alternate facility, unless it has characteristics (including equal speed capability and good maintenance) which would make it the facility of choice for all cyclists.

Class II and III Criteria: In many situations, especially in urban areas, Class I bike routes are not physically possible. Class II or III bike routes may provide good on-street recreational cycling in these areas; these additional policies are required to govern the implementation of the on-street routes:

1. Give high priority to streets with the following characteristics: scenic qualities, low traffic, acceptable grades, few driveways, safe intersections, a route which has the right of way, directness of route, and pavement width sufficient to handle the volume of bicycles and autos on the route.
2. Bike routes may be striped when the traffic levels are high, the pavement width is adequate to accommodate a separate lane, or speeds of auto traffic are in excess of 30 mph.
3. Class III routes (signed only) are recommended when traffic levels are low and there is not sufficient width to stripe a separate lane.

The bicycle trails element of the Regional Trails System is intended to provide a network of bicycle trails throughout the two-county area. This plan does not intend to limit a bicyclist's right to use other roadways; its goal is to develop a system of recreational trails which can be used by cyclists of all types.

DESIGN STANDARDS:

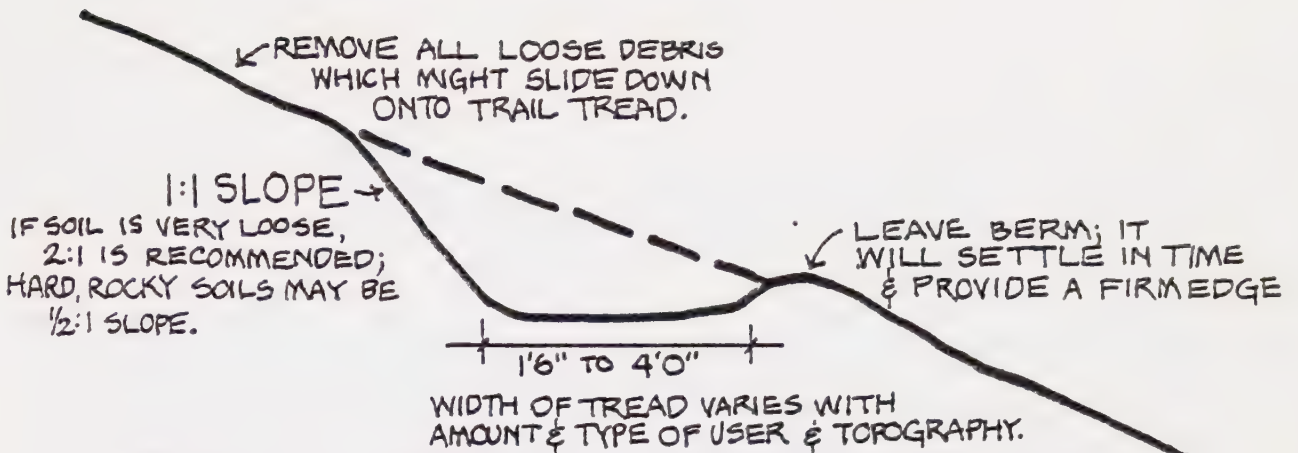
Hiking & Riding Trails

1. Temporary Route Flagging: Required flagging shall be done with easily removable plastic ribbon and/or marked stakes prior to construction, and shall be removed when construction is completed.
2. Methods: Hand construction is preferable to machine construction. Machine construction should be allowed only in disturbed areas, or where the trail also serves as a service trail. Visible evidence of trail construction should be confined to the trail tread. Construction should attempt to make as little impact on the natural environment as possible.
3. Grades: Grades should be held to a minimum. Steep grades are tiring for hikers and horsemen and create erosion problems. Grades of 10% or less are desirable; grades may be as great as 15%, but should be avoided or kept as short as possible. Long, gradual switchbacks should be used rather than short, steep switchbacks.
4. Tread: Generally, tread width should be about 3' to 4' wide. The tread may be narrower if necessary, but under no circumstances less than 1'6". The tread width should be determined by amount and intensity of use as well as topography and vegetation. If the tread is narrow, occasional passing areas must be provided at places with gentle slopes.

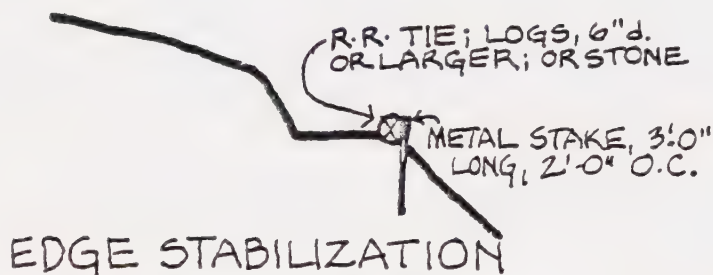
In order to reduce erosion and, therefore, maintenance problems, disturbance of the soil surface should be kept to a minimum. Only those rocks, stumps, and roots which interfere with passage should be removed.

The degree of cut allowed on a slope depends on the soil type, hardness, etc.; make slope cuts steep, but not so steep that erosion or loss of stability will result. Make transitions on all cuts so that the trail will be molded into the terrain. Construct the tread with provision for settling and sloughing. On side slopes, loose material which may slide onto the trail should be removed. Also, a berm of earth, rock, or wood on the outside edge of the trail may be necessary. Generally, a trail on a rubble or talus slope should be built out rather than cut into the loose material.

Steep areas may be handled by terracing or building steps. These must be reinforced with stone or wood. Steps simply cut into the slope should not be used, as these become slippery when wet, and eventually erode. If

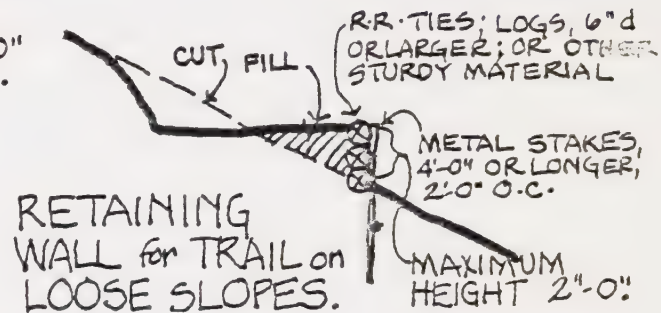


TYPICAL TREAD CONSTRUCTION

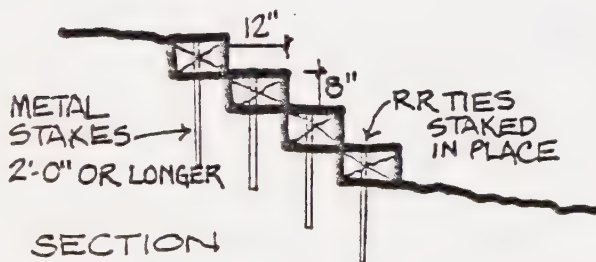


EDGE STABILIZATION

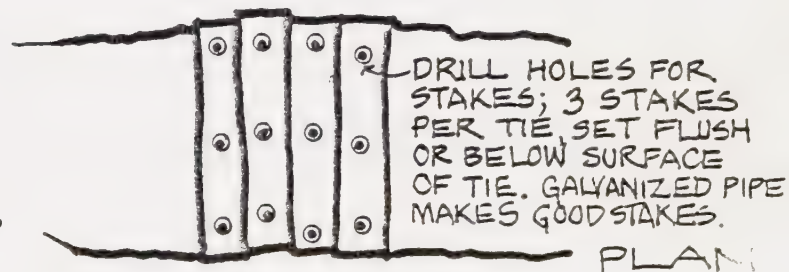
SET LOG, RR TIE OR STONE ALONG EDGE, HELD IN PLACE WITH METAL STAKES. NOTE: STAKES MUST NOT PROTRUDE ABOVE LOG.



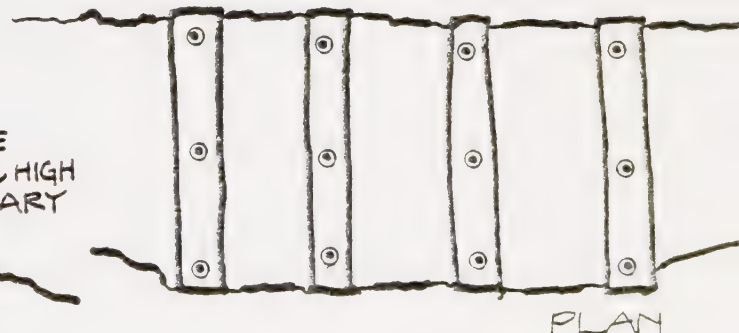
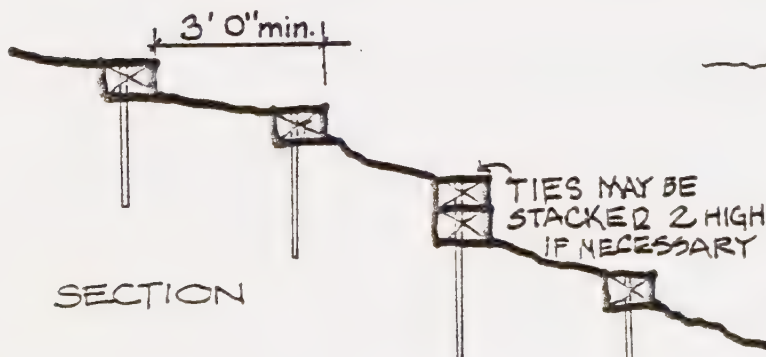
RETAINING WALL for TRAIL on LOOSE SLOPES.



SECTION



RAILROAD TIE STEPS for HIKING TRAILS



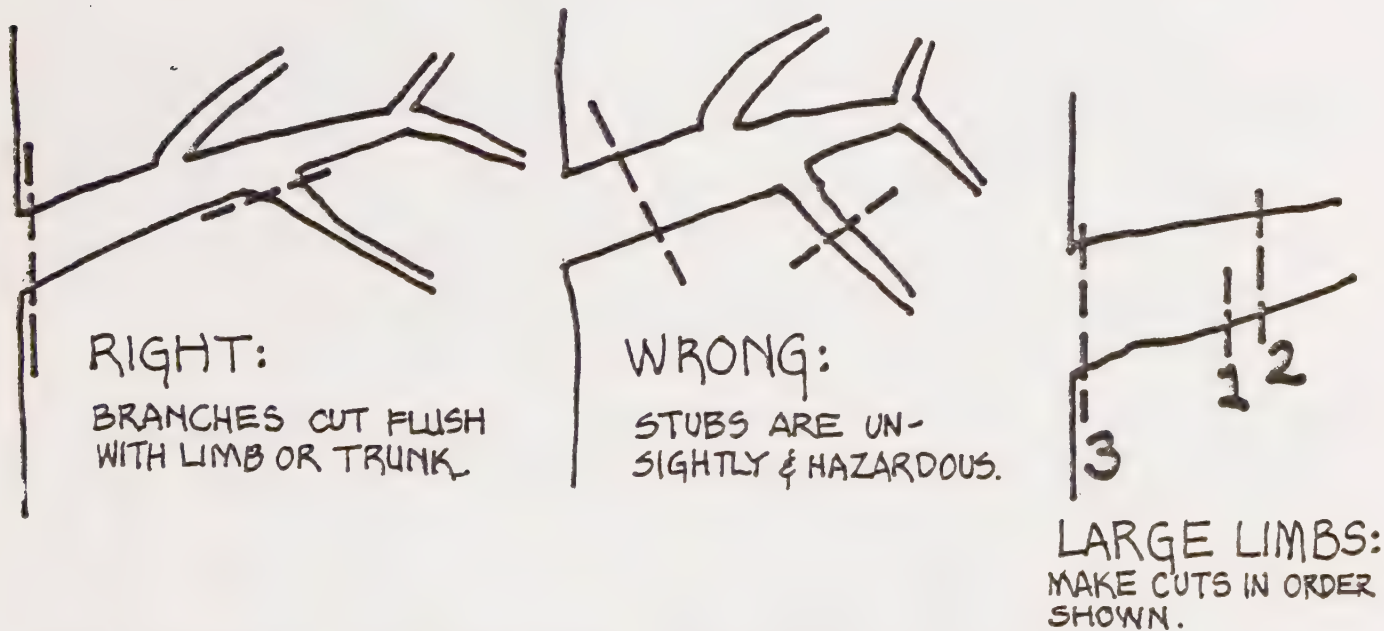
R.R. TIE TERRACE-STEPS for HIKING-RIDING TRAILS

steps are part of the tread, they must be appropriate for the type of trail user. Steps can be negotiable by horses, but they must be broad, flat terraces, at least 3' deep. See sketches.

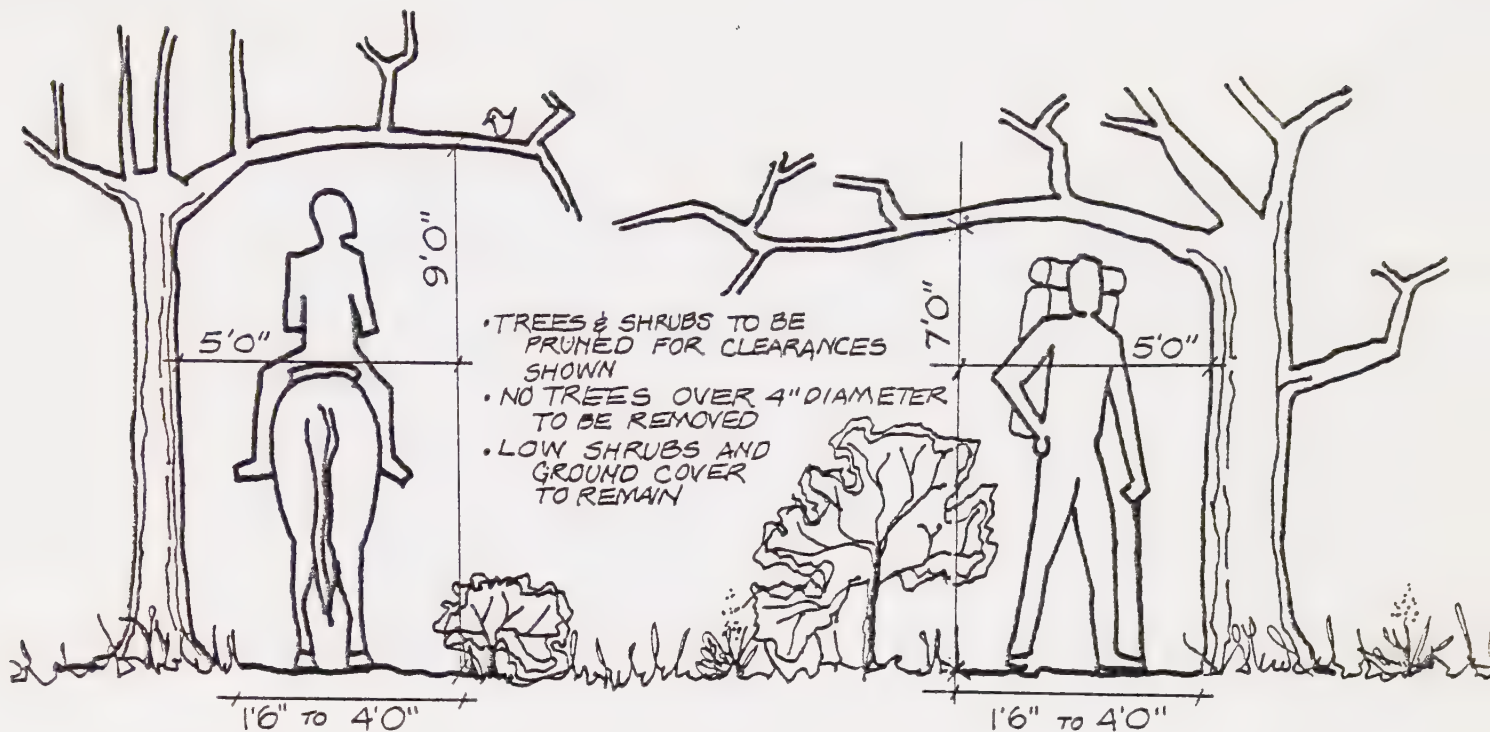
5. Vegetation: Vegetation should be preserved as much as possible to protect the aesthetic quality of the trail. Vegetation should be cleared to a height of 7'0" for a hiking trail and 9'0" for a riding trail, and should be cleared to a width of at least 5'0" at shoulder height for both types of trails. Pruning along trails should be selective. Good pruning practices should be followed, including cutting branches off flush with the limb, and stems flush with the ground. Stumps may be treated to prevent sprouting. Large limbs should be pruned flush with the trunk and wounds sealed to prevent decay. Dead and dying limbs and snags which may fall on the trail should be removed. Ground cover plants and low shrubs should not be cleared except from the actual tread. Spot spraying with herbicides is permissible when poison oak predominates or hand pruning is ineffective in keeping trails clear.

Where a trail is on a side slope, the vegetation on the uphill side will be more invasive and should be cut back more severely than vegetation on the downhill side. See sketches.

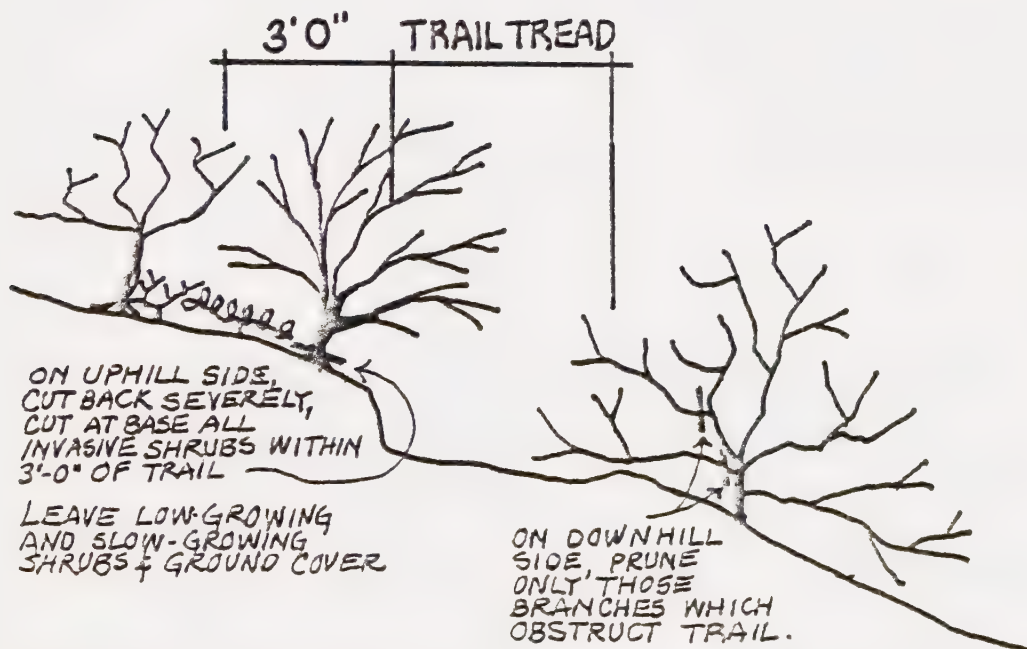
Vegetation should be allowed to return to cut slopes to increase stability. Where appropriate, any replanting should be in conformance with land use development plans of individual parks and vegetative management plans. Replant areas with vegetation indigenous to those areas or compatible with plantings already in place.



PROPER PRUNING PRACTICES

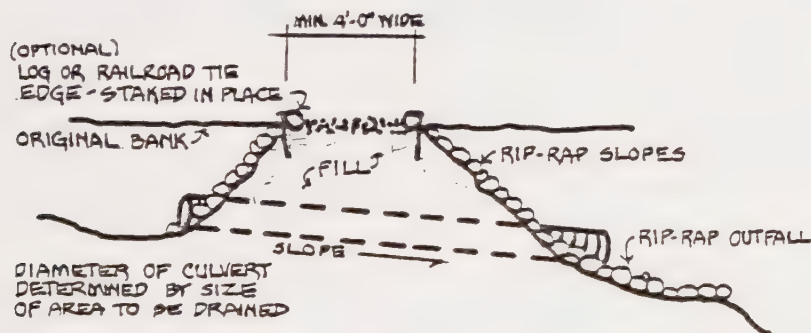


VEGETATION CLEARING FOR TRAILS

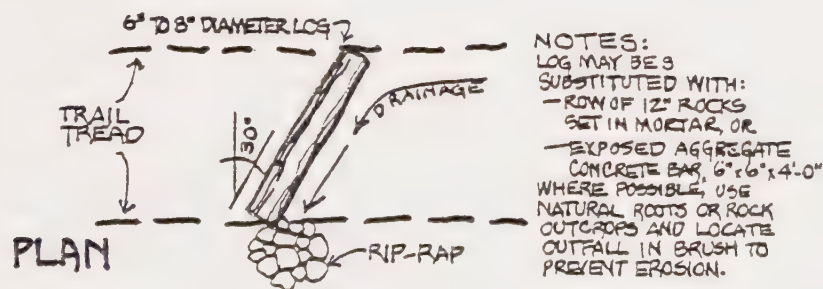


VEGETATION CLEARING ON SIDE SLOPES

6. Drainage: Drainage is the most important item in trail construction; it requires a special study of the precipitation, runoff, springs, and streams in the area. Surface water must be diverted from the trail's surface before it builds up to an erosive force. The method used to drain the tread will depend on the quantity and speed of water and the type of soils in the area. The best and simplest drainage is to outslope the trail tread, 1%-3%. This allows the water to sheet off, rather than run in a stream. Low grades help prevent drainage problems; steep grades allow the water to run faster, building up erosive force. Minor rivulets crossing the trail tread can be directed along a water bar (below). Trails crossing larger streams, whether permanent or intermittent, will require a culvert. If a culvert is used, it is very important to prevent erosion at the outfall end by providing rip-rap or other hard surface for the water to hit first. If this is not provided, the water leaving the culvert will erode the surface below it, and eventually the fill around the downslope end of the culvert. A drawing of a typical culvert installation is also shown. Avoid causing off-trail drainage problems, such as erosion or siltation, by careful culvert placement.



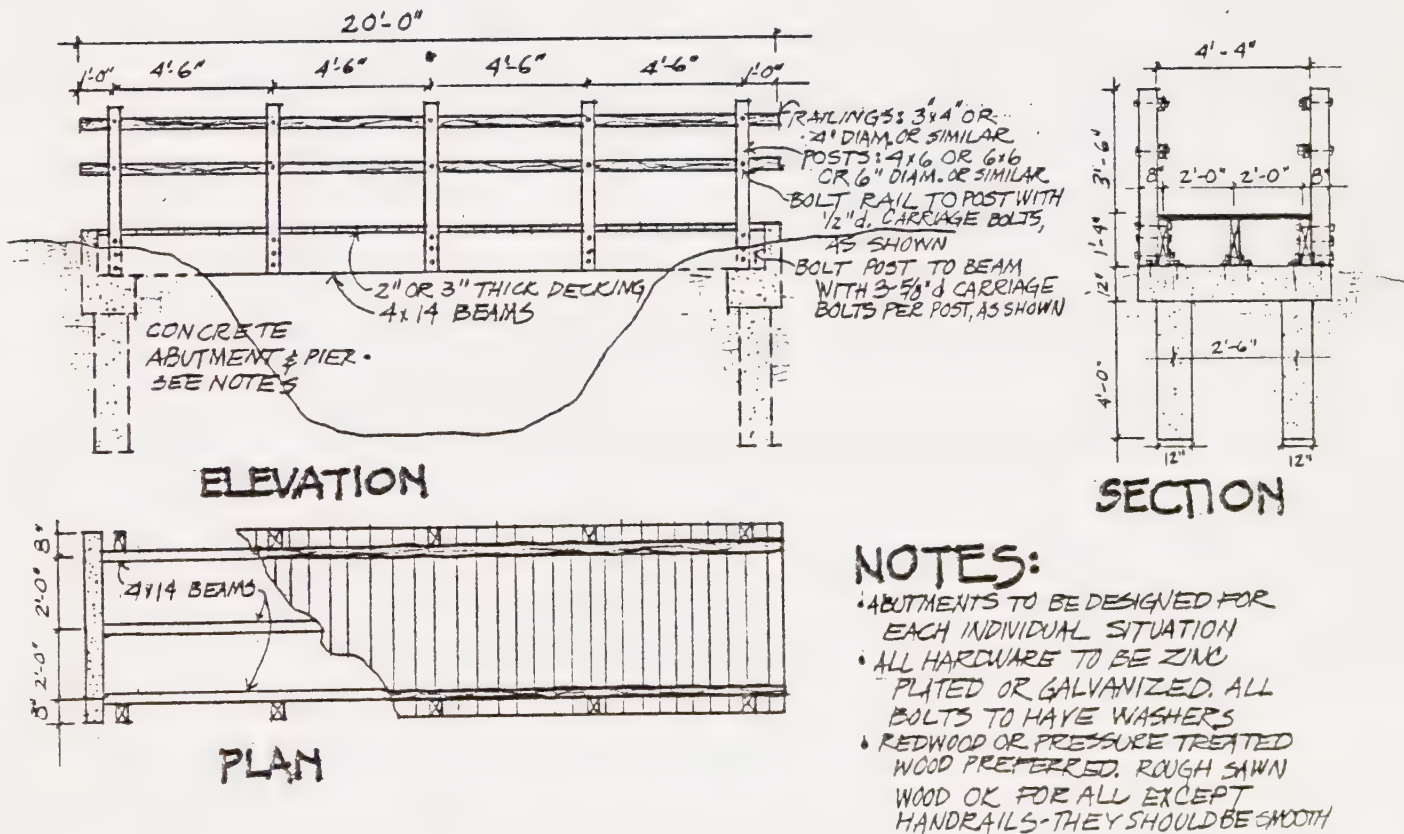
TYPICAL CULVERT INSTALLATION



WATER BAR TO PREVENT EROSION



7. Surfacing: The trail may be treated or surfaced in areas where: the dust caused by trail use presents a problem; it is needed to prevent erosion; or it is needed to improve slick or muddy conditions. The color and type of material chosen for surfacing, whether bark, gravel, oil coat, etc., shall be compatible with the environment through which the trail passes. The surfacing material must not create severe runoff or erosion problems.
8. Structures: Structures may include culverts, retaining walls, bridges, etc. If possible, structures should be avoided because of their high installation and maintenance cost. Ideally, trail structures should be built using on-site materials or imported materials which blend into the environment. They should be designed so that they are harmonious with the surroundings. Structures should be as vandal-proof as possible. Use recessed bolt heads wherever possible. Bridges shall be 4'0" wide or wider on a riding trail, and may be as narrow as 2'0" on a hiking trail. Fill over culverts shall be a minimum of 4'0" wide.



20' FOOT HORSE BRIDGE (17' CLEAR SPAN)

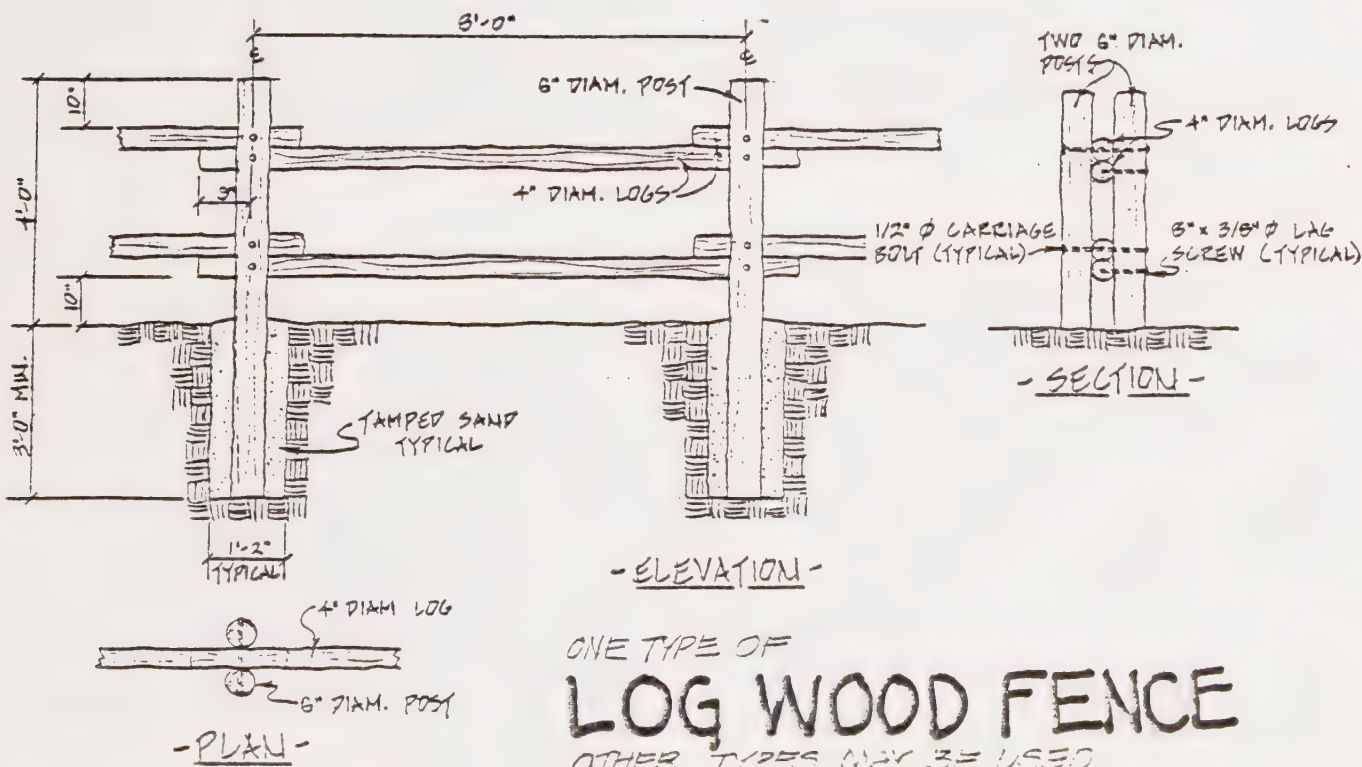
9. Fences: Fencing may be necessary on some trails to prevent trail users from trespassing on adjacent lands, to contain grazing animals, or to protect the user from dangerous areas. Some of these problems may be avoided by selective location of the trail route, but there will be cases where fencing is the only solution.

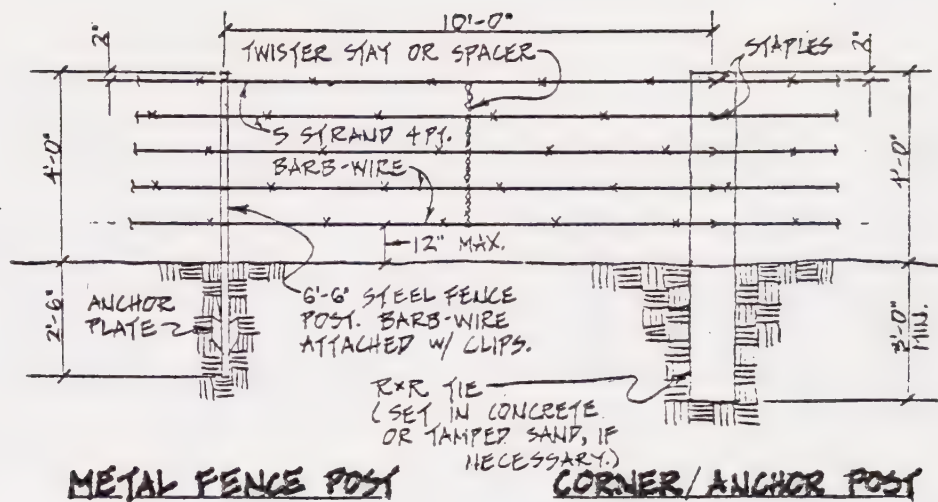
Fencing to isolate property may be of any type material; but, when a fence is close to and visible from a nearby residence, wood, wire mesh, or chain link material are recommended. The design and precise location of the fence should be worked out in cooperation with the property owner. Cost is a limiting factor.

In areas where a trail crosses grazing land, the boundary fence will generally be barbed wire. Twisted smooth wire may be used, especially if the land is grazed by horses. Wire gates or metal pipe gates may be installed in the fence line to allow access into the trail corridor for the convenience of grazing tenants, adjoining property owners, or fire and service vehicles.

10. Gates: Gates should be avoided whenever possible through careful routing, fencing or use of stiles. Gates for trail users are four to five feet wide, and must be self-closing. They may be constructed of wood or metal; wood blends more naturally with the environment, but metal gates are more durable.

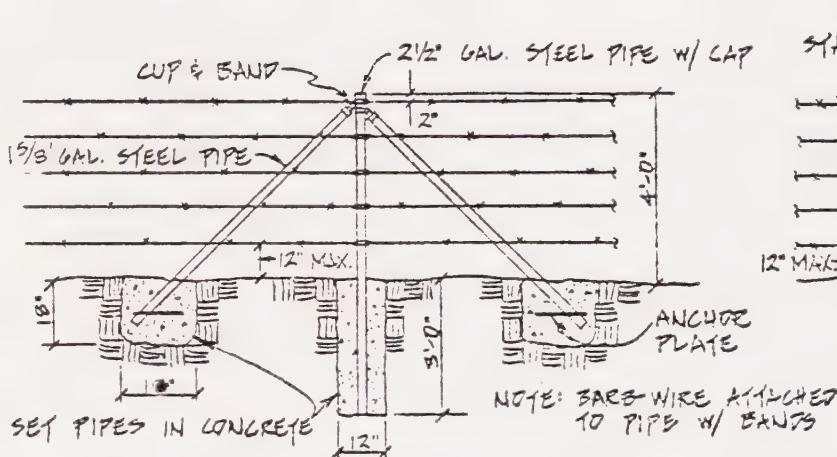
Vehicle gates are sometimes needed; these are usually made of metal pipe, but may be wood if appropriate. Vehicle gates near roads should be signed to prevent parking, and should be reflectorized. Wire gates may be installed for occasional access to grazing lands or for service or maintenance. All vehicle gates should be securely locked.



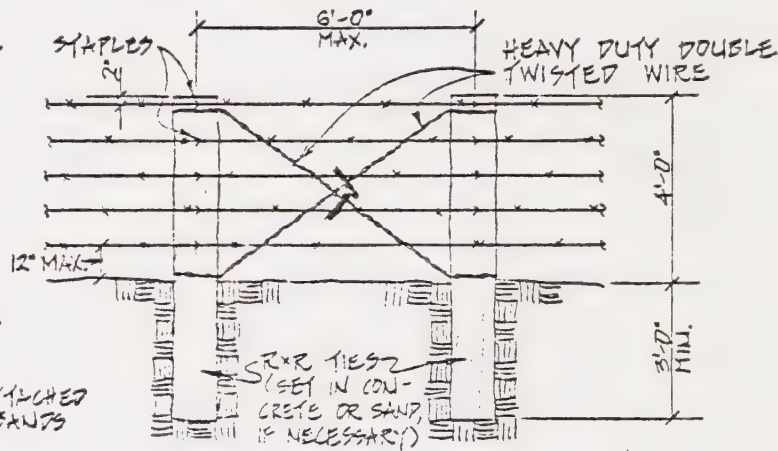


METAL FENCE POST

CORNER/ANCHOR POST



STEEL PIPE CORNER POST



STRETCHING ASSEMBLY

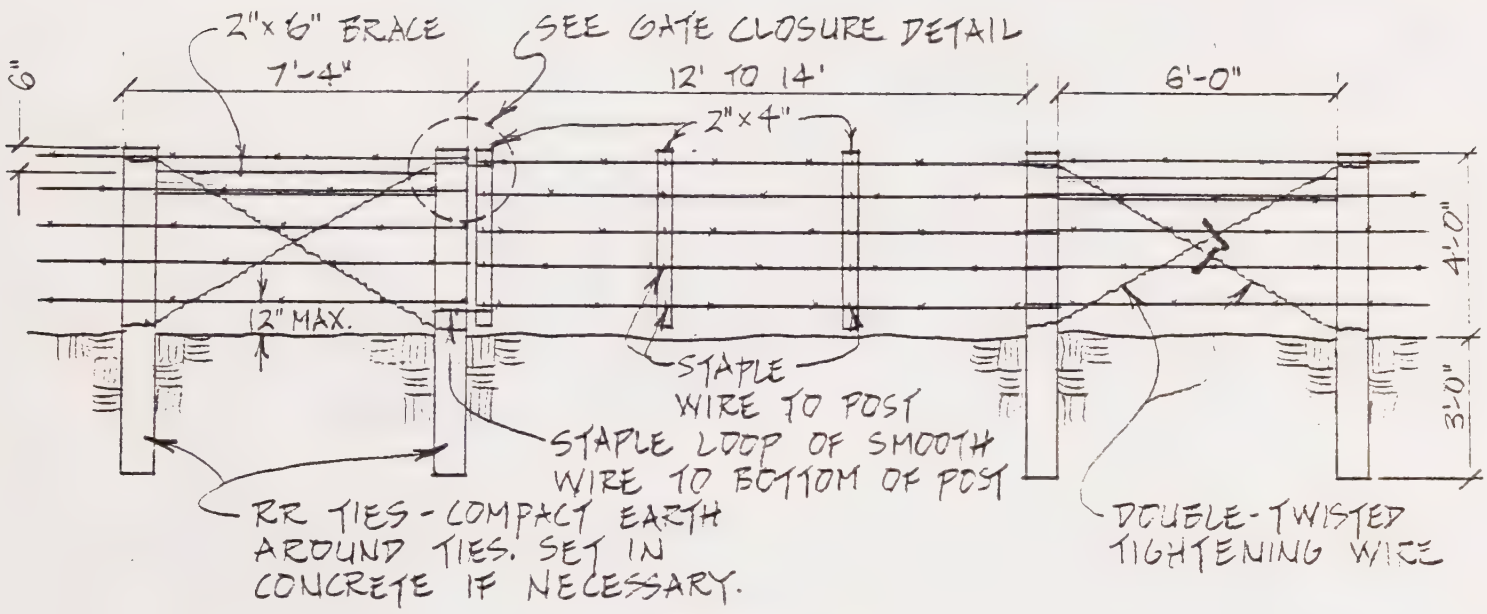
(INSTALLED EVERY 1000 FEET)

NOTES:

- 1) Barb wire fencing shall consist of five (5) strands of 4-point galvanized steel wire
- 2) Wooden posts may be substituted for steel posts, but must be the same length and set to the same height as above. Wooden posts must be treated to prevent rot and no less than 4"x4" or 4" diameter.
- 3) Corner posts to be set at all corners and bends. They may be steel pipe corner assemblies, good quality railroad ties, or 6"x6" treated wooden posts. End posts and gate posts to meet same specifications.
- 4) Corner type anchor posts to be placed every 300' for long straight stretches.
- 5) Stretching assemblies to be installed every 1000'.

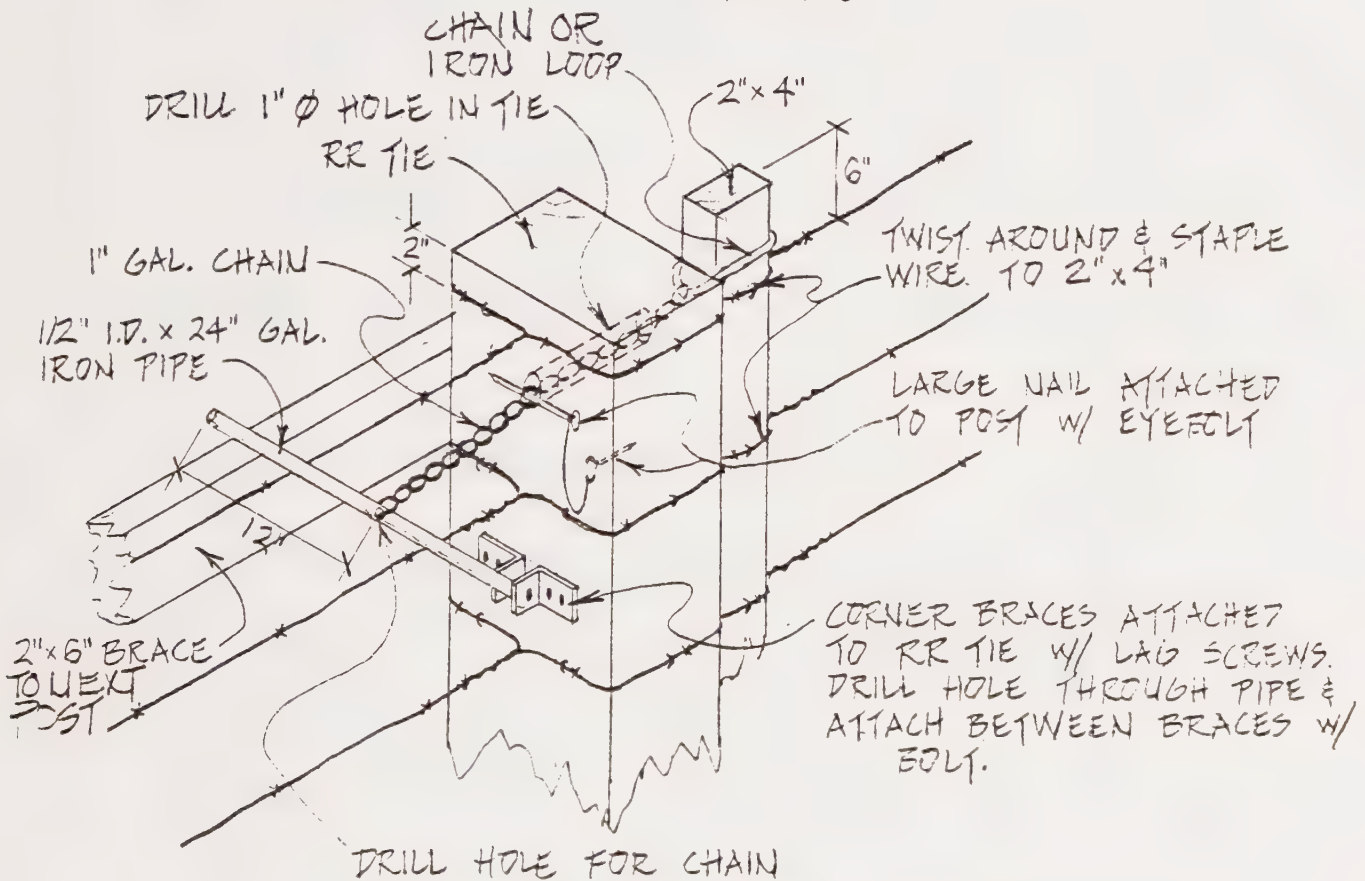
BARB WIRE FENCING

NO SCALE



PLAN

1/4" = 1'-0"



GATE CLOSURE DETAIL

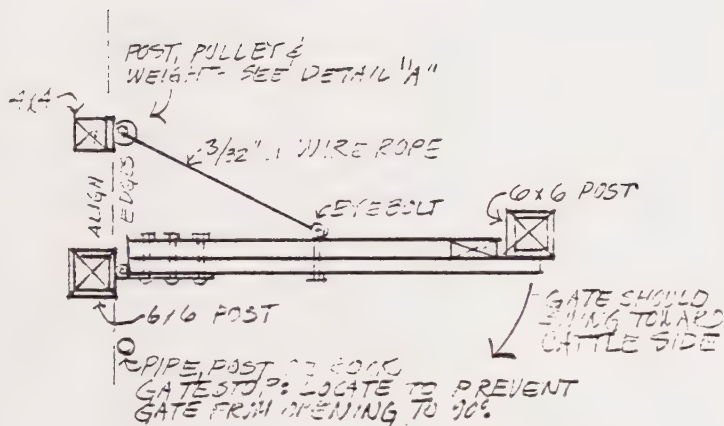
1" = 1'-0"

WIRE GAP

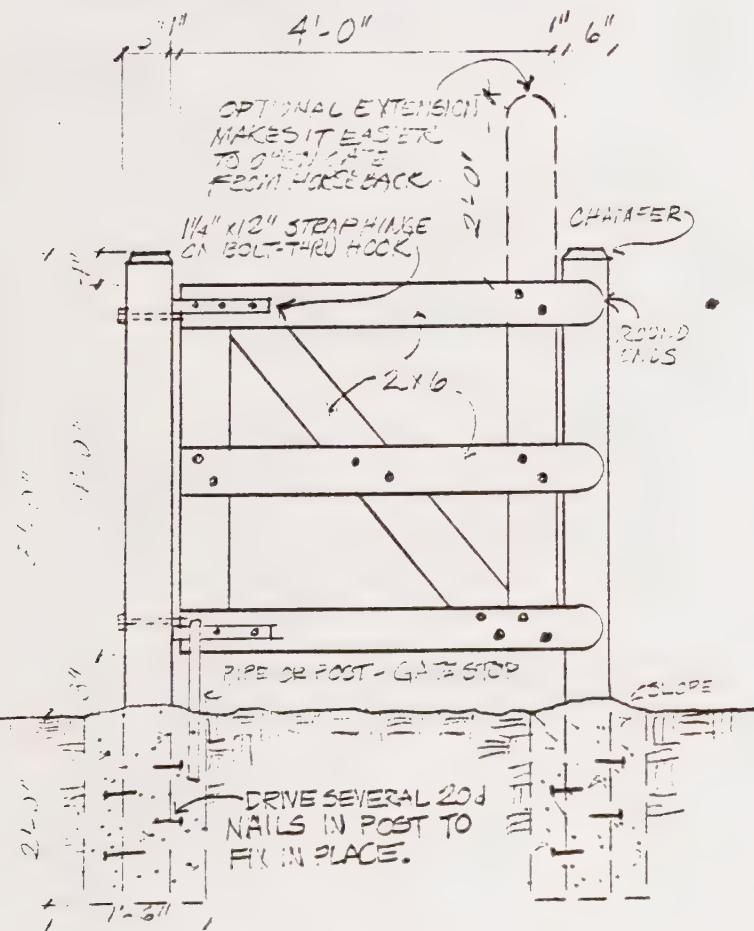


NOTE: SEE E.B.M.U.D. DRAWING
NO. 6326-G FOR
CONSTRUCTION DETAILS

NO SCALE • DESIGNED BY E.B.M.V.D



-PLAN- 1/2" = 1'-0"



-ELEVATION-

1/2" = 1'-0"

SELF-CLOSING TRAIL GATE

NOTES:

-Alternate closing methods:

--Use Bommer door spring, heavy type.
--Set post slightly out of plumb so gravity pulls gate shut.

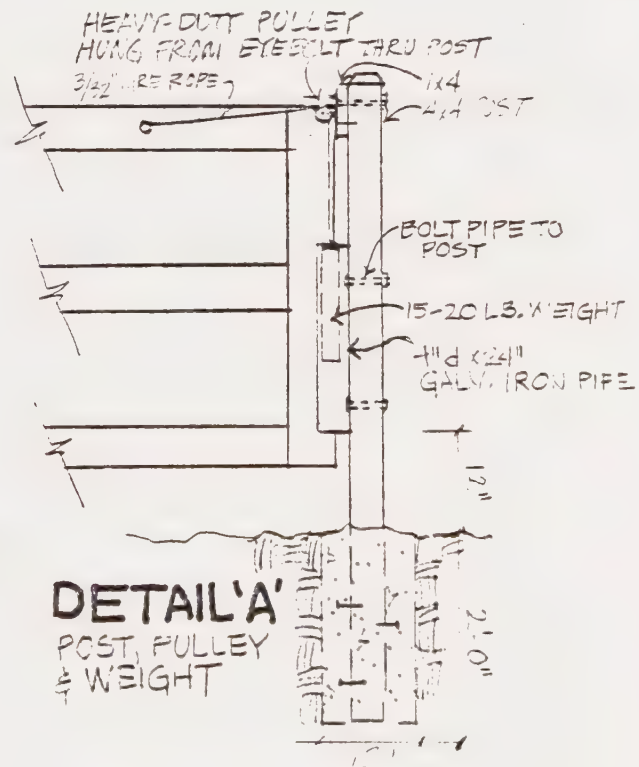
-All wood to be rough sawn, redwood or treated wood. Posts must be redwood or pressure treated.

-All hardware to be hot-dip galvanized.

-Use washers on all bolts. All bolts to be 3/8" d. Carriage bolts unless otherwise noted.

-If cattle are on both sides of gate, a latch must be installed to prevent cattle from pushing gate open.

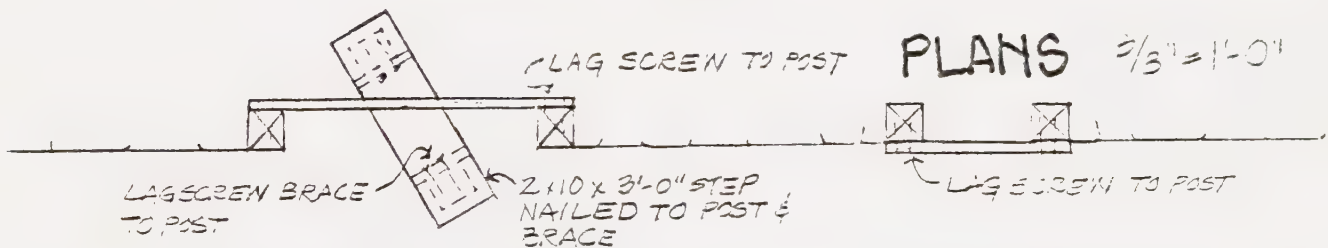
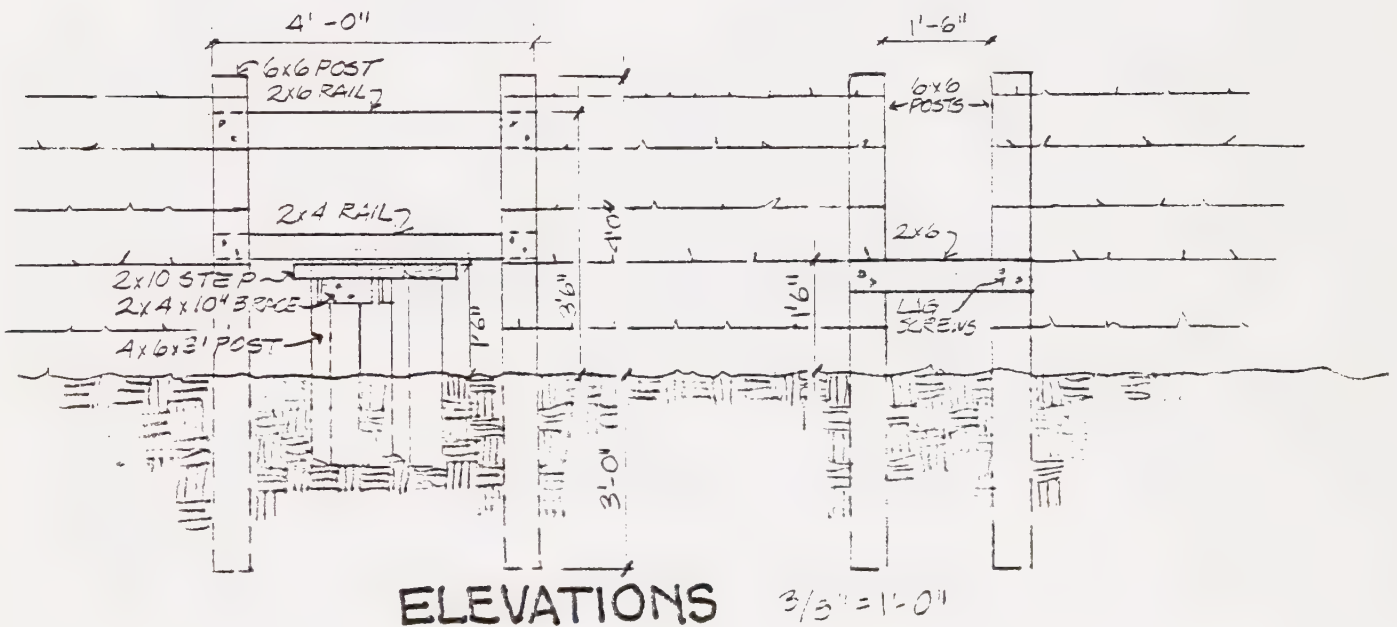
-May be combined with motorcycle barrier if needed. This gate for use on hiking/riding trails where cattle are present; on hiking only trails, a stile is better.



11. **Barriers:** Barriers to prevent horse riders from using a hiking-only trail may include fences, stiles, and natural barriers such as fallen trees or low branches. These barriers will also discourage motorcyclists from using a hiking trail. A trail which is used by hikers and riders can be made difficult to motorcyclists by creating a log barrier at the entrance (see sketch) or by leaving fallen logs on the trails. These are difficult to cross with a motorcycle, but may be stepped over by hikers and riders.

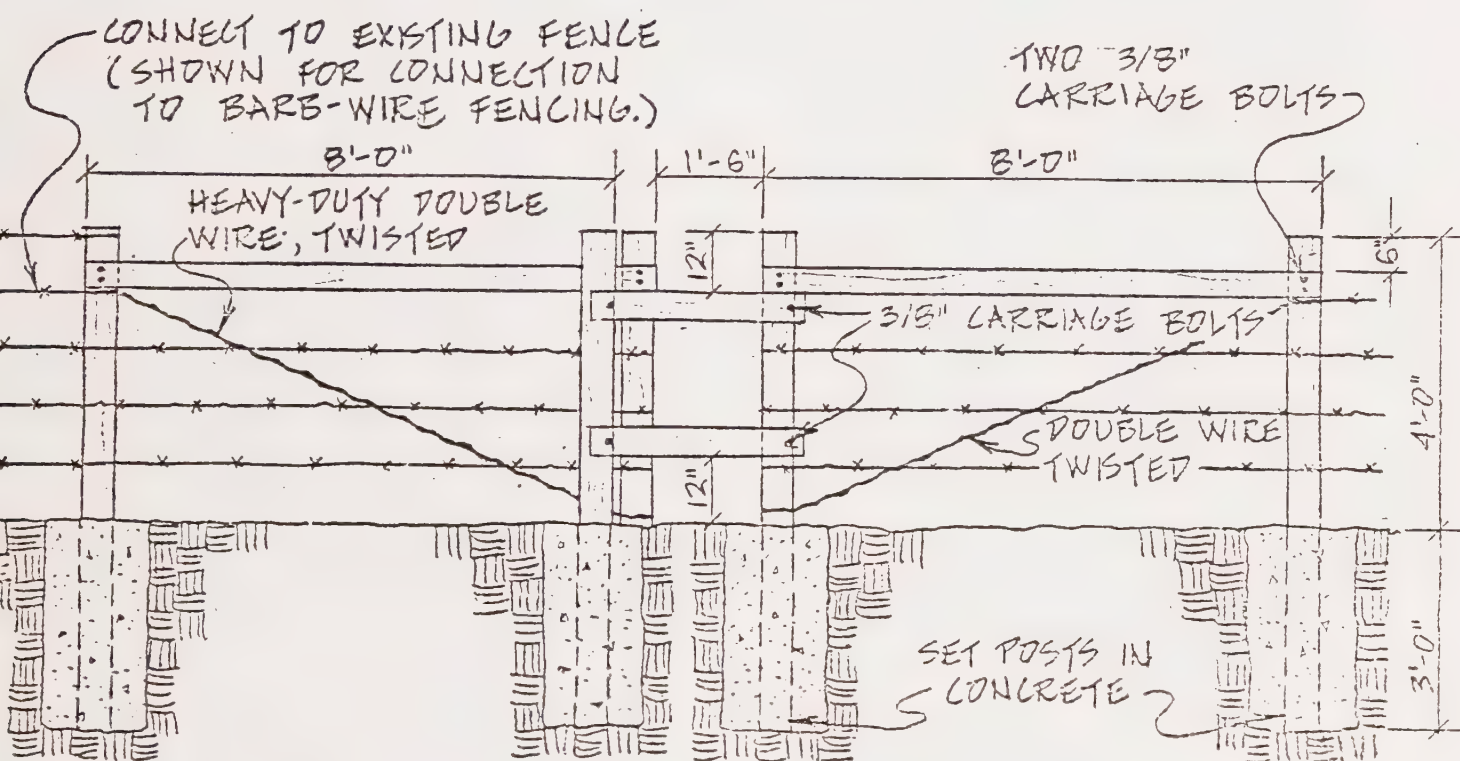
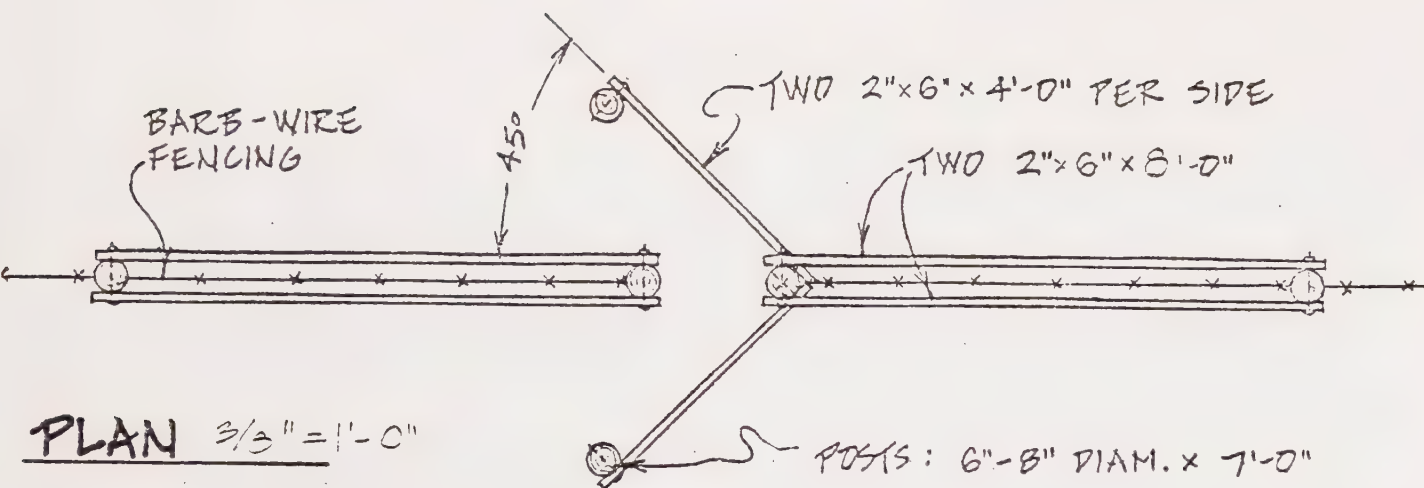
A pile of brush may be used across a bootleg trail, abandoned trail, or switchback shortcut to discourage use.

Barbed wire or other wire should not be used as a trail barrier.



ALL WOOD SHOULD BE REDWOOD OR PRESSURE TREATED WOOD.

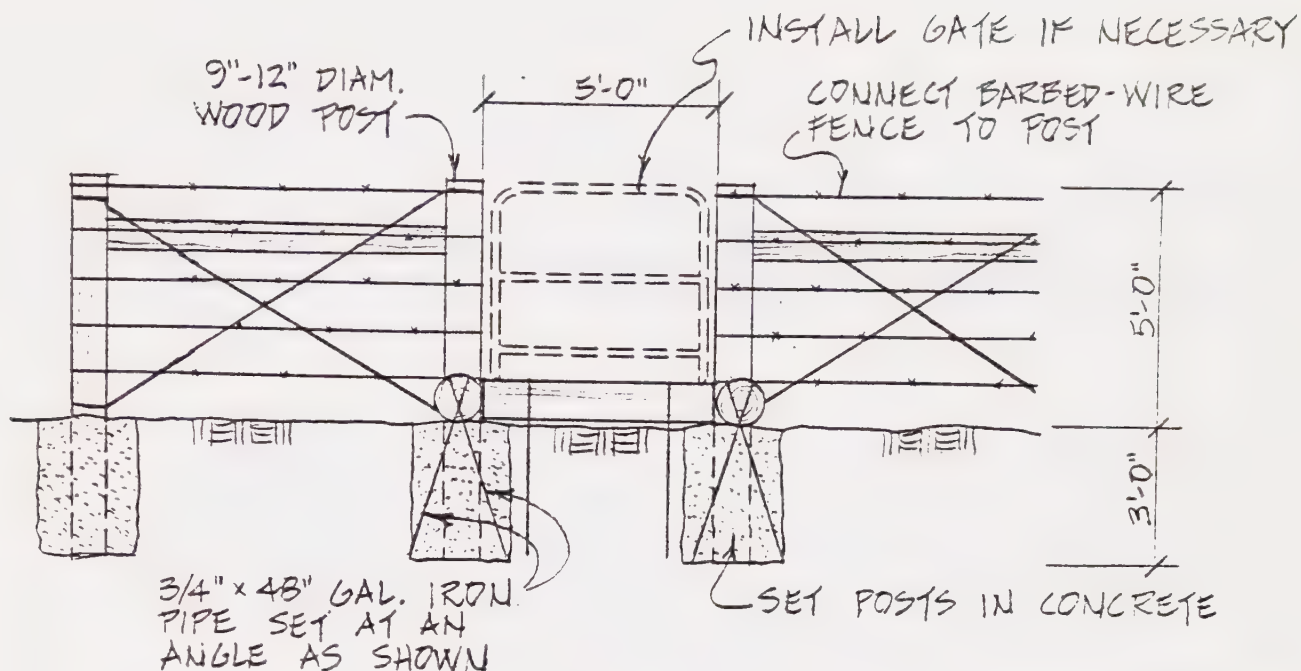
#1 #2 STEP-OVER HIKING STILES



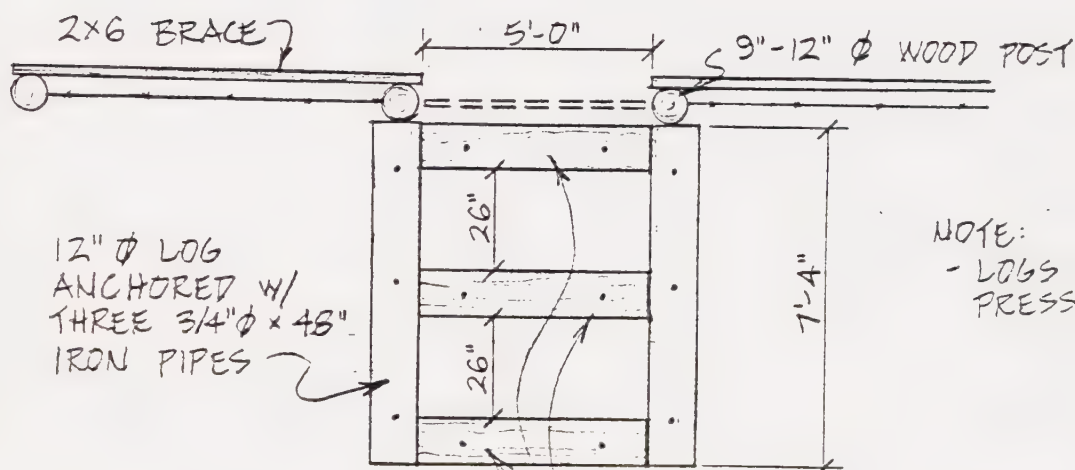
NOTES:

- ALL WOOD ROUGH-SAWN & TREATED.
- ALL HARDWARE HOT-DIPPED GALVANIZED.

WALK-THROUGH HIKING STILE



ELEVATION



NOTE:
- LOGS TO BE PRESSURE-TREATED.

THREE 12" ϕ LOGS ANCHORED W/ TWO 3/4" ϕ x 48" GAL. IRON PIPES PER LOG

PLAN

MOTORCYCLE BARRIER

SCALE: 1/4" = 1'-0"

DESIGN STANDARDS:

Bicycle Trails & Routes

The advantages of Class I Bike Routes over Classes II and III (see definitions) are the increase in safety resulting from the separation of bicycles and cars, the opportunity to go to remote places away from automobile traffic, and the appeal such a bikepath has to a wide variety of people. However, the safety advantages of a Class I route are lost if the route has numerous on-grade intersections with automobile traffic. Therefore, it is essential that Class I routes be developed with an absolute minimum of on-grade street crossings, especially if the primary users of the route are children and inexperienced adult bicyclists.

The decision to build a Class I route will be based on availability of right of way, usefulness of existing streets, and construction costs. A Class I route will not be built where it is in view of existing parallel adequate streets. The Class I route must provide a clearly different or clearly superior alternative to existing roads.

A. DESIGN STANDARDS FOR CLASS I BIKE ROUTES:

1. Design Speed: 20 mph for level and undulating stretches, 30 mph for long downhill stretches.¹
2. Maximum Grades: The maximum grade for bikepaths is 10%. Grades of 5% or less are most desirable.

3. <u>Sight Distance</u>	<u>Speed (mph)</u>	<u>Stopping Distance (feet)</u> ¹
	10	50
	15	80
	20	120
	25	160
	30	200

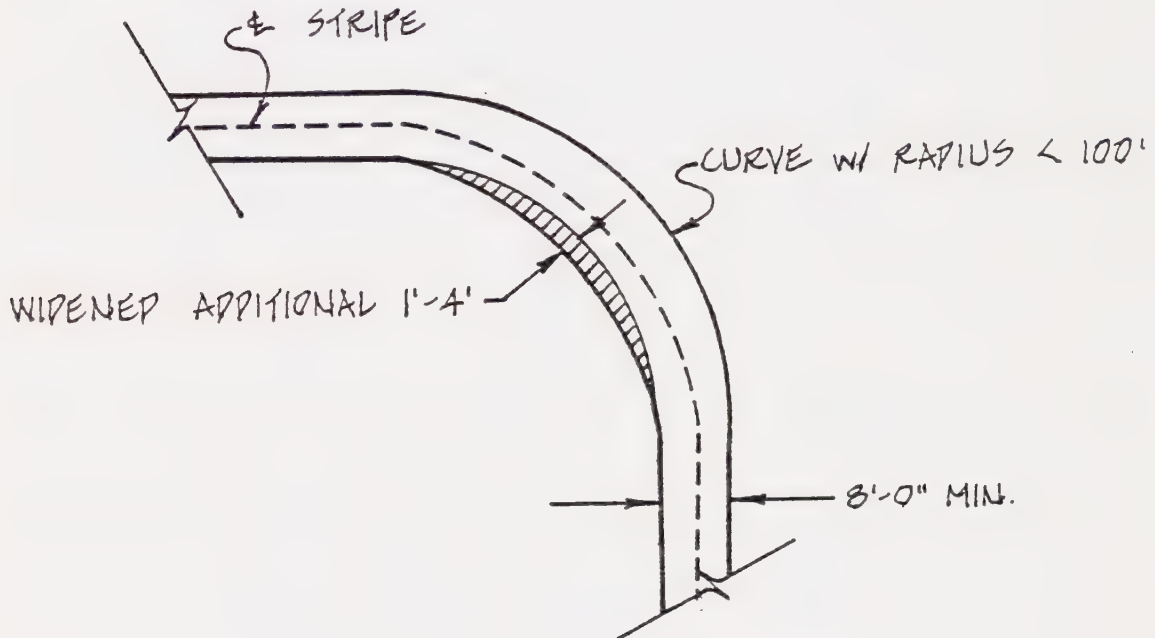
4. <u>Curvature</u>	<u>Design Speed (mph)</u>	<u>Minimum Radius (feet)</u> ¹
	15	35
	20	65
	25	100
	30	140

The above table shows the necessary design radius for various design speeds. No adjustments for superelevation are included; the minimum radius can be decreased approximately 2% for each 0.01 foot/foot increase in superelevation. A superelevation of 0.05 foot/foot is the generally recommended maximum design value with 0.02 foot/foot the absolute minimum to allow for drainage.

¹ From CalTrans "Highway Design Manual," Section 7-1000, Bike Routes, 7/11/74.

Short, sharp curves should be avoided. Longer, gradual curves allow for greater sight distance and eliminate the need for bicyclists to abruptly adjust their speeds.

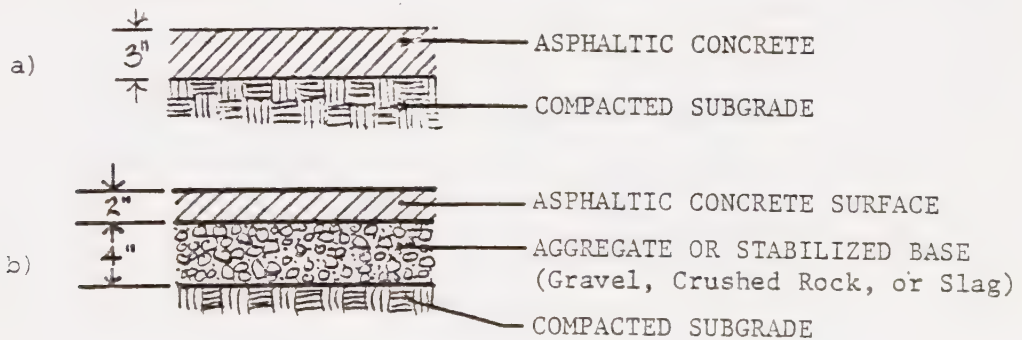
For potential high-speed bike trails where bicyclists would enjoy relatively uninterrupted travel, curves with radius of 100 feet or less should be widened about one to two feet to a maximum of four feet to allow for bicycle lean and greater maneuverability. See Figure 1.



Curve Widening

FIGURE 1

5. Surfacing: Asphalt is the preferred surface for bicycling. It is smooth, relatively easy to maintain, and durable. Asphalt may be laid directly on the prepared subgrade, if the basement soil is of high enough quality. With poor quality basement soils, 4" of base rock is recommended.



Asphalt Paving

FIGURE 2

Because of limited funds for development of bike paths and the high cost of asphalt paving, the District will explore the use of other hard surfaces for bike paths. Other surfaces which may be used include: hard-packed dirt, oil and chip seal, soil stabilization polymers, and soil cement. The District will upgrade these surfaces as use dictates and as funds become available. Good drainage and a compacted subgrade are essential for the success of any paving method. These alternate paving types shall be used only in purely recreational Class I bikeways; no alternate paving method should attempt to provide an acceptable substitute for an existing highway.

6. Surface Drainage: An asphalt surface requires a minimum slope of 0.02 foot/foot for proper drainage. A banked bike path is preferred to a crown bike path because it is much simpler to construct and a more uniform surface can be achieved. Ordinarily, surface flow-off from the path will be adequately dissipated if the shoulders have gentle slopes. However, when a bike path is constructed on the side of a hill, a drainage ditch of suitable dimensions may be desirable on the uphill side to intercept the hillside drainage. In areas with a heavy surface runoff or poor subgrade drainage, culverts, drain tiles, or catch basins are advised.
7. Minimum Width and Clearance: Exclusive bike paths generally will be designed as two-lane, two-way bike paths with a minimum paved width of eight feet. This width allows service vehicles adequate access for maintenance operations. A two-foot gravel shoulder on each side must also be provided. The minimum horizontal clearance from physical obstructions is 12 feet; the minimum vertical clearance from overhanging branches is 8.5 feet. See Figure 3.

A center stripe is necessary to separate opposing directions of travel. At areas with very steep grades, the bike path should be wider to allow for more maneuvering room for bicyclists coming downhill at higher speeds. If equestrian use also shares the route, a separate path must be provided; equestrians and bicyclists are not generally compatible and the paths must be clearly separated.

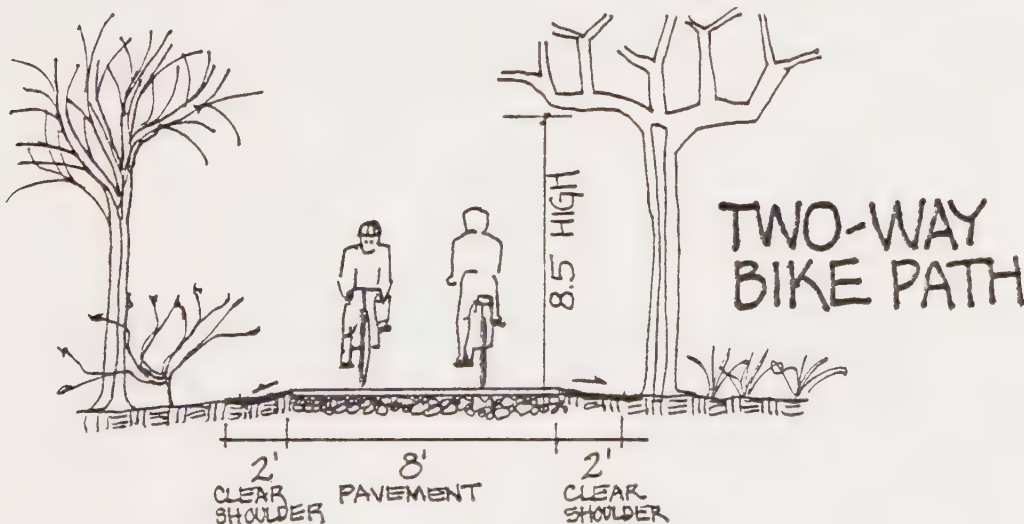


Figure 3

8. Barriers: Barriers or fences may be necessary on bike paths to separate cyclists from an adjacent hazard, or to prevent automobiles or motorcycles from entering the path. Barriers or fences along the edge of the bike path should be set back at least 2' from the edge of the pavement. If barriers are required on both sides of a bike path, the distance between them should be at least 12', to allow adequate passing room, and space for service vehicles to operate. Fences should be at least 4' high; because the cyclist has a high center of gravity, a lower barrier does not prevent a cyclist from falling over it. Suggested materials are chain link or wood; the fencing should be designed so that no posts or protrusions are on the cyclist's side. Fences and barriers should be painted or signed to be visible by the cyclist, especially where they begin.

Bollards are used to prevent automobiles or motorcycles from entering a bike path, as well as to slow cyclists down when approaching an intersection. The bollards shown below do both. Spacing may be wider if the purpose is only to keep automobiles out. See also Paragraph 12, page 44.

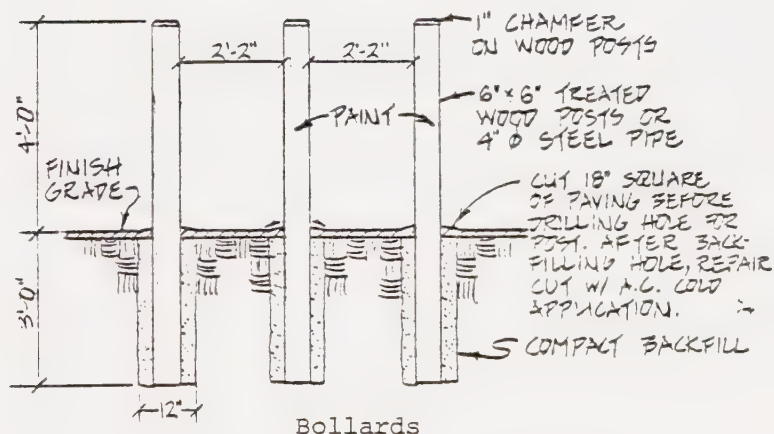
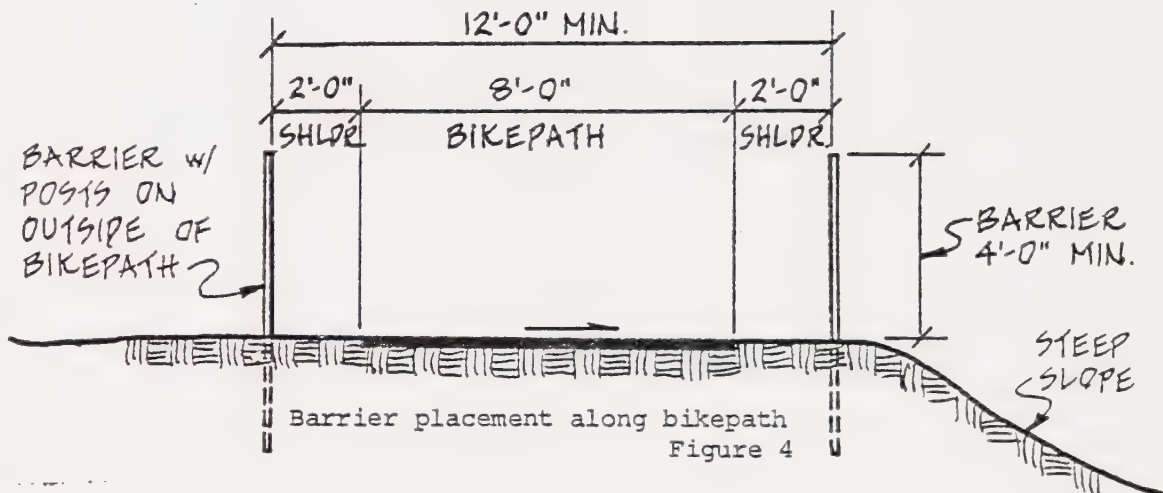


Figure 5

9. Bridges: At stream or drainage channel crossings, a bridge is required with a surface smooth enough for bicycling. The bridge should be at least 12 feet wide with railings four feet high, and should be strong enough to support a service vehicle. Where service access across the bridge is not required and where trail traffic is light, and if costs are prohibitive, the bridge may be narrower. Span bridges are recommended to reduce the debris buildup in the creek bed.
10. Intersections: Ideally, bike paths should be provided with separated grade crossings at intersections with automobile traffic. This is often not possible due to costs or topography. When on-grade crossings are unavoidable, it is desirable to locate the bike path to take advantage of an existing traffic light, or to install one at the intersection. If neither a light nor a separated grade crossing is possible, the intersection should be carefully marked and signed for both motorists and cyclists. Crossing locations should be chosen to provide long sight distances for both the trail users and the drivers. Generally, the trail users will be required to stop; however, if a bicycle path has a higher average daily volume of traffic than an intersecting street or highway, the traffic on the street or highway may be stopped to give the right of way to the traffic on the bike path. All intersection designs must be worked out with the traffic engineer of the city or county involved. (For illustrations of various intersections, see the section on signing.)
11. Environmental Consideration: Disturbance of the surrounding environment should be kept to a minimum and should not extend further than the immediate project area. Also, cuts and fills should be kept to a minimum. In many instances, either new landscaping or clearing would be desirable. Landscaping can be used for stabilizing slopes, creating physical or visual barriers, or providing shade. Clearing may be advisable for opening up views, creating rest areas, removing unwanted plants, or increasing sight distance. Noise should be kept to a minimum; therefore, mopeds, motor-assisted bicycles, and motorcycles will not be allowed on bike paths.
12. Needs of Handicapped: Bicycle and service trails also provide a surface smooth enough to be used by persons in wheelchairs and on crutches. Where this type of use is expected, design of bollards and other features should include the needs of the handicapped. See p. 66 for a bollard design which allows wheelchair access.

B. GUIDELINES FOR CLASS II AND CLASS III BIKE ROUTES

Bicyclists can be accommodated effectively on roadways. Many existing scenic roads with low to moderate traffic volumes and speeds provide excellent recreational cycling. Other factors determining choice and design of on-street bike trails are: truck traffic volume, accident experience, existence of bus routes and stops, pavement width and right-of-way availability, scenic qualities, abutting land use, grade profile, travel characteristics, and user characteristics.

Through cities, EBRPD bicycle trails will often be placed on streets. Thus, it is important that EBRPD bicycle trails be delineated clearly from nearby local bike routes. Most important, the trails should pass through urban areas as simply, clearly, and safely as possible.

1. Design Speed: Generally, streets are engineered for higher speeds than a bicycle travels, so most streets are suitable for bicycles.
2. Maximum Grades: Choose streets with grades of less than 10%. Where this is not possible, choose routes with the most gradual slopes.
3. Curvature: Streets are generally engineered for higher speeds and larger U-turning radii than are required by bicycles. In certain situations, it may be advisable to widen a curve one to two feet, as shown in Figure 1, for greater maneuverability.
4. Surfacing: Existing road pavements are usually adequate for bicycles. However, repave rough sections, patch holes, and make certain that the shoulder is clean and stable. A good standard is that any holes, cracks, etc. more than one inch deep should be repaired. Special care should be taken if the route crosses railroad tracks; a smooth surface is essential for bicycling. If a road is widened to accommodate a bike-lane, the added paving should conform to standards for the type of roadway involved and should be paved the full width of the traffic lane and shoulder to avoid uneven seams and cracks.
5. Surface Drainage: Low spots which collect water and any other situations with poor drainage should be corrected. When widening a road to provide a bikelane, proper drainage must be provided.

Precautions must be taken to assure that drainage structures do not obstruct the path of bicyclists. Grate structures that consist of bars running parallel to the curb can easily entrap a narrow bicycle wheel. These parallel bar grates must be replaced with those designed to allow bicyclists to cross safely. Acceptable designs include grates with bars perpendicular to the curb, zig-zagging bar grates, diagonal bar grates, or the existing parallel bar grates with cross strips welded on. Any design must not substantially reduce the ability of the inlet to intercept water.

6. Minimum Width and Clearance: Class II bike trails consist of delineating a separate lane on a roadway specifically for bicyclists. The minimum width for a bikelane is five feet. A bikelane is generally marked with a six-inch wide solid white line; the words "Bike Only" or a stencilled bicycle form may be added at intersections and other areas for clarity. Use standard highway signs to mark these routes; see section on signing. Minimum roadway widths to accommodate bikelanes are shown below, Figure 6.

Considerable controversy exists over the need for striping bikelanes on a street, as opposed to simply identifying a route along an existing street with adequate lane widths. Before a route is striped, careful consideration should be given to simply designating the street as a route, with just directional and destination signs. The decision whether or not to stripe the bikelane must be made in cooperation with the traffic engineers of the city or county involved.

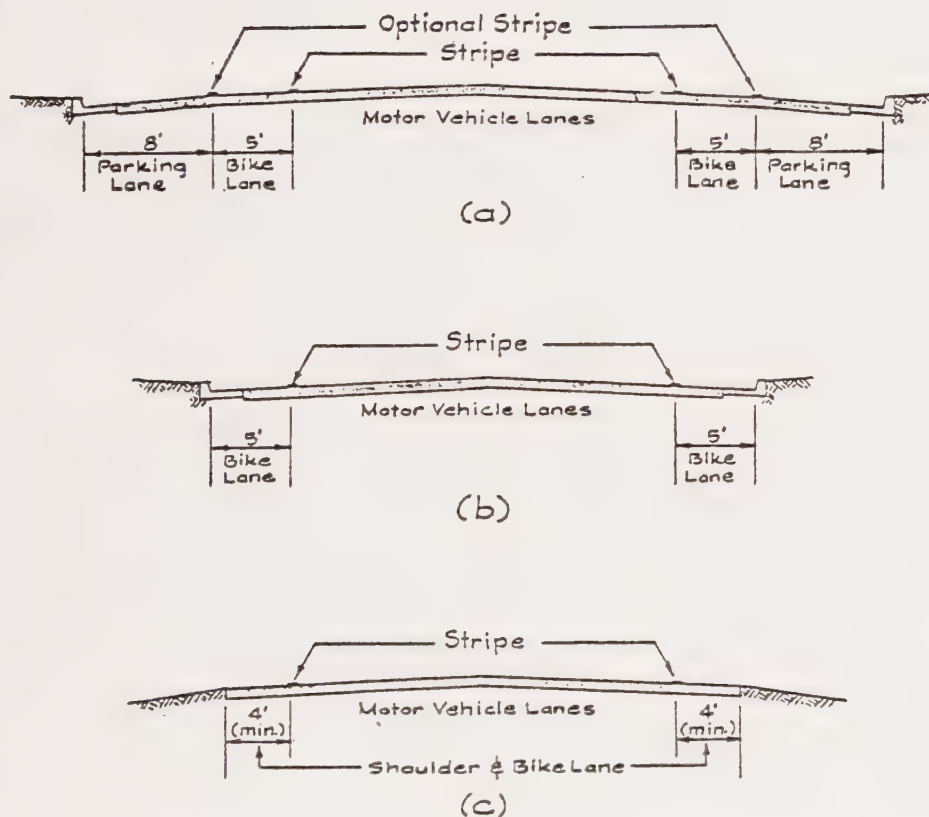


Figure 6.
Typical Bikelane Cross Sections on Two-Lane or Multi-Lane
Highways

Class III bike routes consist of guide signing on existing streets. Class III routes are especially suitable for streets with less than 1,000 vehicles per day, and slow speeds (less than 40 mph). Signing for Class III routes should give direction and destination information, and should be used sparingly. A white line, delineating the right hand edge of the outer travel lane, may be painted. This is not a "bikelane" stripe, but rather serves as a shoulder line, and separates the shoulder area from the travel lane. It also improves night visibility for both cyclists and automobiles.

Class III routes may be established on any street which meets the following lane width/traffic volume criteria:¹

Average Daily Traffic	Peak Hour Traffic	<u>Acceptable</u>		<u>Preferred</u>	
		Outside Lane Width	Shoulder Width	Outside Lane Width	Shoulder Width
Less than 1,000 ADT	100	12	None	12	2
1,000 - 4,000	400	12	2	12	4
4,000 -12,000	1,200	12	4	12	6
More than 12,000	1,200+	12	6	12	8

7. Barriers and Fences: Where a bike route is on a roadway crossing a bridge, or above a steep slope, a barrier may be necessary. Standard highway guard rails are not high enough to provide safety for the cyclist and should be replaced or supplemented with a higher safety fence at least 4'-0". See Class I Design Guidelines, Section 8.
8. Bridges: If a bridge exists on a roadway designated as a bike route or lane, it should be wide enough to accommodate both automobiles and bicycles. Lane widths should conform to the table above; if the bridge is not wide enough, it should be widened to provide a uniform lane width along the entire route.
9. Intersections: Bike routes through intersections should be designed for all types of bicyclists, accommodating those whose actions are similar to pedestrians and those whose actions are similar to motorists.

Class II and III bike trails should be routed along roads with the safest intersections. Traffic engineers should be consulted to redesign hazardous intersections. See signing section for intersection treatments.

¹Adapted from "Basic Concepts in Cycling Traffic Engineering," John Forester.

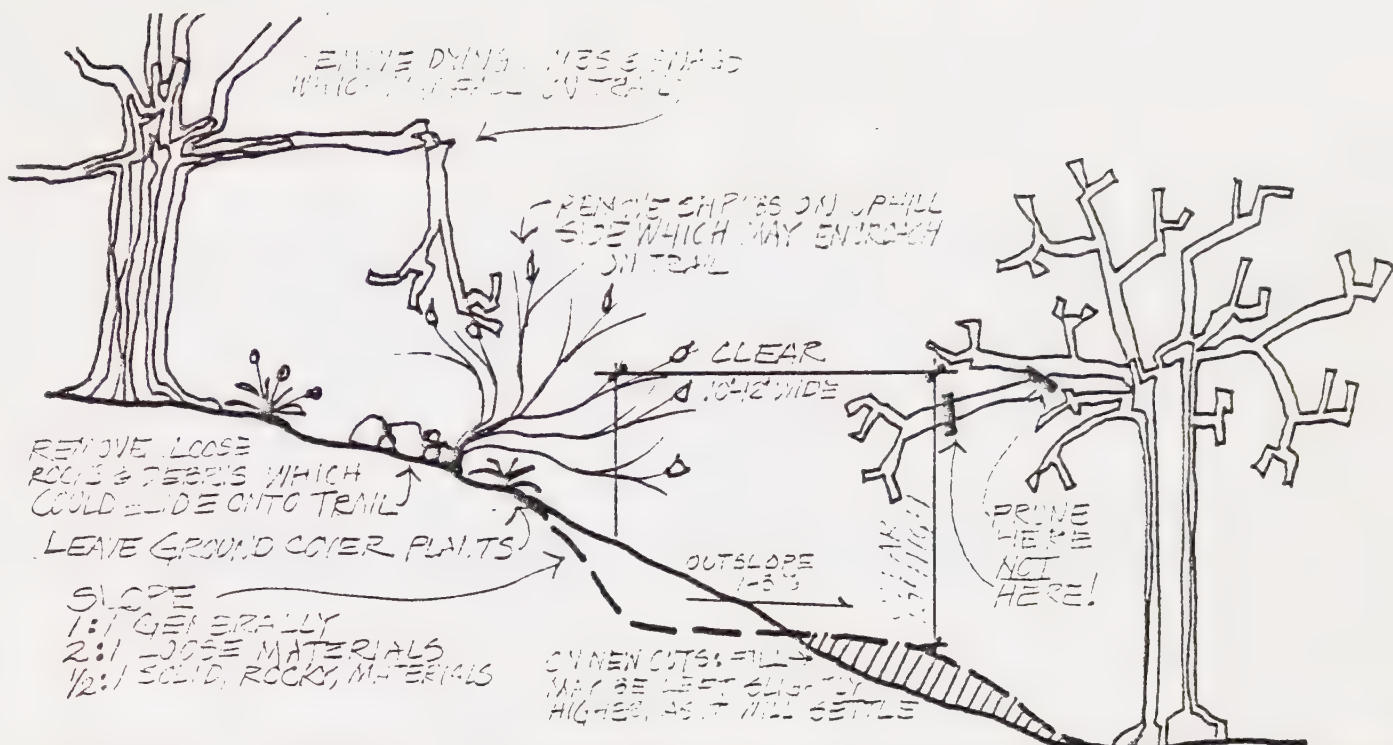
DESIGN STANDARDS:

Service Trails

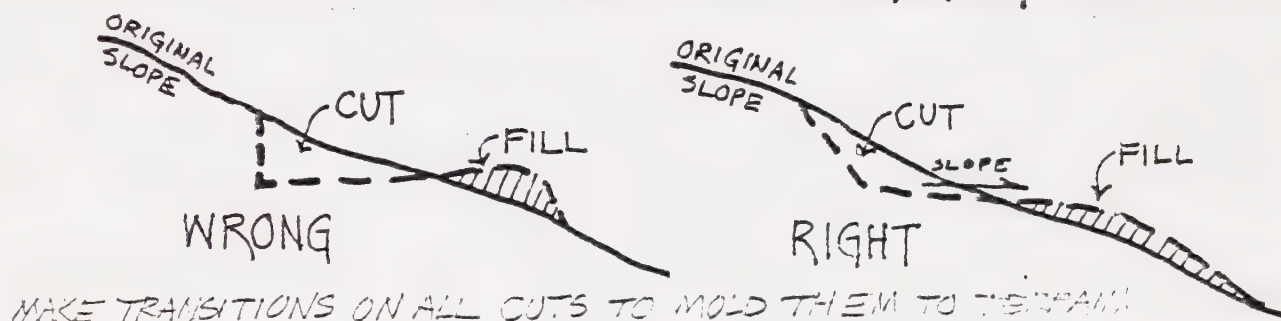
Service Trails are paved or unpaved roads within the park designed to provide service vehicle access. They may also be used by private vehicles, on a restricted basis, and are also used by hikers, equestrians, and bicyclists.

1. Routing: Routes are determined as part of the Land Use Development Plan for each park, or on an interim basis when a Land Use Development Plan cannot be completed before essential trail development, by the Assistant General Manager. Flagging and staking of the specific route shall be done by the Trails Coordinator, the Zone Manager or Park Supervisor, and a representative of the Planning and Design Department. If formal surveying is required, it shall be done by the survey crew in the Planning and Design Department.
2. Methods: Service trails are constructed by bulldozer, or grader. The work may be done by the Roads and Trails Crew or a contractor hired for the job.
3. Grades: Grades should be held to a minimum to prevent erosion and make the service trail as accessible as possible year round. Grades should be kept to less than 10%; grades up to 15% are acceptable, but only for short distances. Long, gradual switchbacks should be used rather than short, steep switchbacks.
4. Curvature: Curves must be large enough to allow a firetruck to turn. A 40' radius (measured to centerline of road) is recommended.
5. Tread: Width of tread may be up to 12' wide, however 10' is preferable. In order to reduce erosion and, therefore, maintenance problems, disturbance of the soil surface should be kept to a minimum. Only those rocks, stumps, and roots which interfere with passage should be removed.

The degree of cut allowed on a slope depends on the soil type, hardness, etc.; make slope cuts steep, but not so steep that erosion or loss of stability will result. Make transitions on all cuts so that the trail will be molded into the terrain. Construct the tread with provision for settling and sloughing. On side slopes, loose material which may slide onto the trail should be removed. Also, a berm of earth, rock, or wood on the outside edge of the trail may be necessary. Generally, a trail on a rubble or talus slope should be built out rather than cut into the loose material.



TYPICAL TREAD CONSTRUCTION & CLEARING - SERVICE TRAILS



6. **Vegetation:** Vegetation should be removed to a height of 10'. Vegetation on the sides of the trail should be pruned to allow passage, but should be preserved as much as possible to protect the aesthetic quality of the trail. Good pruning practices must be followed, including cutting branches off flush with the limb, and cutting stumps at ground level or below. Stumps left in the trail tread may be treated to prevent sprouting. Large limbs should be pruned flush with the trunk and wounds sealed to prevent decay. Dead and dying limbs and snags which may fall on the trail should be removed. Ground cover plants and low shrubs should not be removed except on the actual trail tread.

Where a trail is on a side slope, the vegetation on the uphill side will be more invasive and should be cut back more severely than vegetation on the downhill side.

Vegetation should be allowed to return to cut slopes to increase stability. Where appropriate, replanting of cut slopes should be in conformance with land use plans and vegetation management plans of the park. Replant areas with vegetation indigenous to those areas or compatible with plantings already in place.

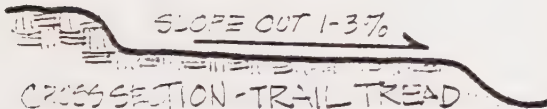
See also vegetation pruning drawings on page 28, under Hiking & Riding Trails.

7. Drainage: Drainage is the most important item in trail construction; it requires a special study of the precipitation, runoff, springs, and streams in the area. Surface water must be diverted from the trail's surface before it builds up to erosive force. The method used to drain the tread will depend on the quantity and speed of water and the type of soils in the area. Outsloping is the simplest and best method; the trail tread is constructed so that it slopes 1%-3%.

This allows the water to sheet off, rather than run in streams. Low Grades also help drain the trail; when water runs down a steep slope, it picks up speed and is more erosive. Water bars, as shown in the section on hiking and riding trail design, are good, but difficult to maintain on vehicle trails. Grade Dips may be used in certain situations where the soil is hard and rocky, but not on fine-textured soils. Culverts are used where a large quantity of water crosses a trail. Size of the culvert is determined by the size of the watershed it drains and the steepness of the slope.

Charts are available which determine culvert size based on these factors. Culverts are usually corrugated metal, but may be concrete, or may be made of stone work. Stone work culverts are the most aesthetically pleasing, and are durable, but are time-consuming to build. Metal pipe or concrete box or pipe culverts are not as good-looking, but are economical and easy to install. To improve their appearance, riprap may be added to hide the ends; the ends may also be painted gray or brown to blend in with natural colors. Insloping, illustrated on the next page, is useful in soils which are rocky, and where the inslope is of a short distance. Insloping consists of sloping the trail tread in toward the hill, creating a drainage ditch on the uphill side of the trail. The water running through this ditch will create serious erosion problems if done on soft soils. However, in hard soils, this ditch can be used to carry surface water to a culvert and then under the trail.

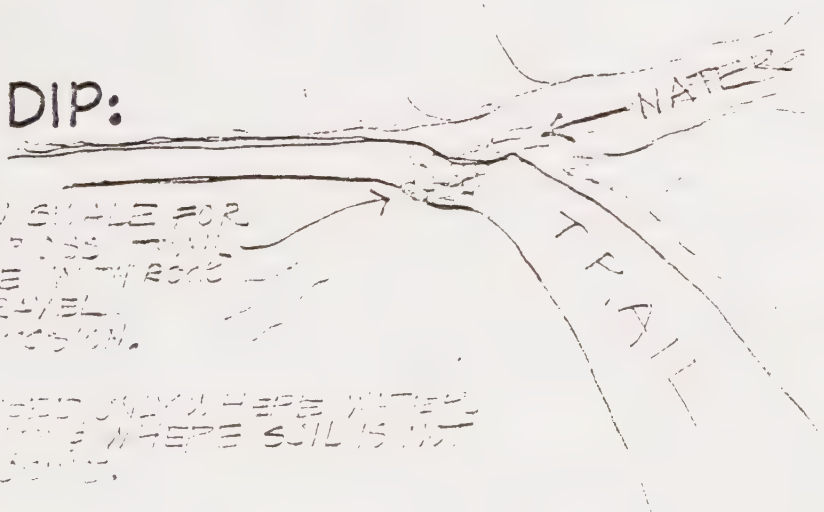
The best drainage method is to avoid problem areas in the first place, and construct the trail properly the first time.

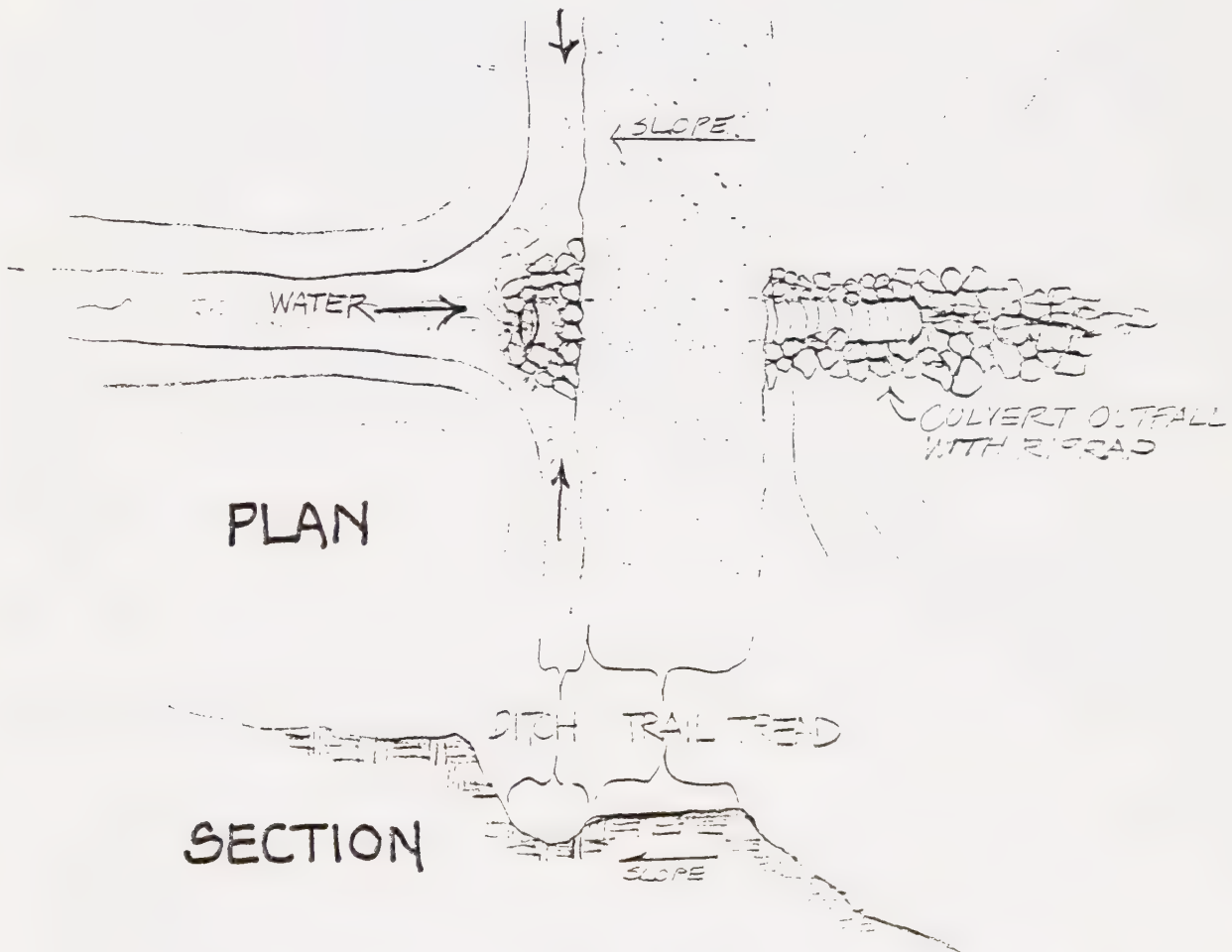
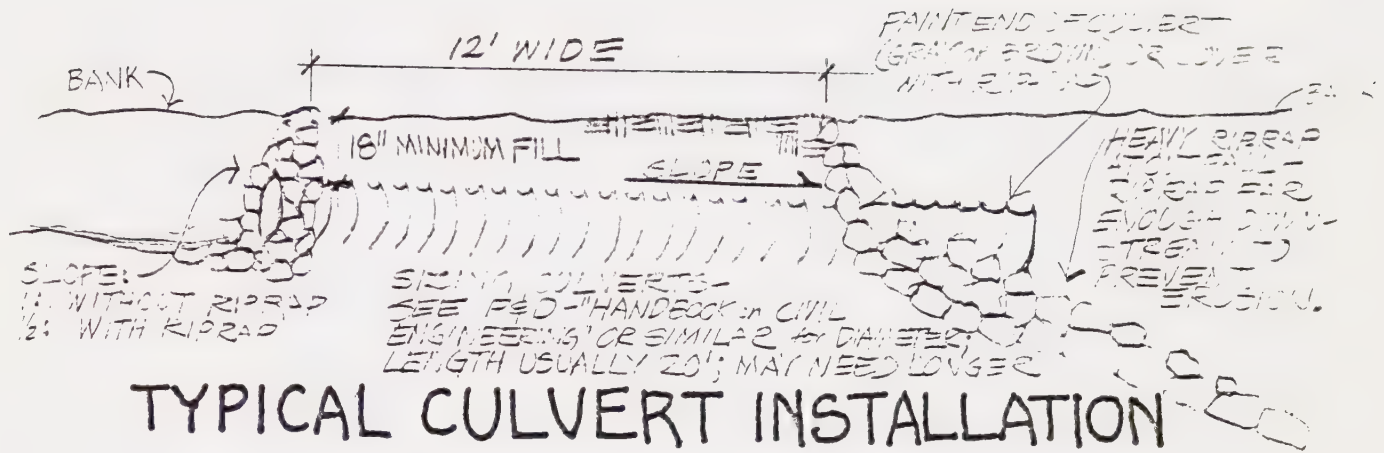


GRADE DIP:

CREATE LOW SHALE FOR
WATER TO PASS THROUGH
COVER SHALE WITH ROCKS
OR COARSE GRAVEL
TO REDUCE EROSION.

SHOULD BE USED ONLY WHERE WATER
FLOWS THROUGH WHERE SOIL IS NOT
FIRM ENOUGH.





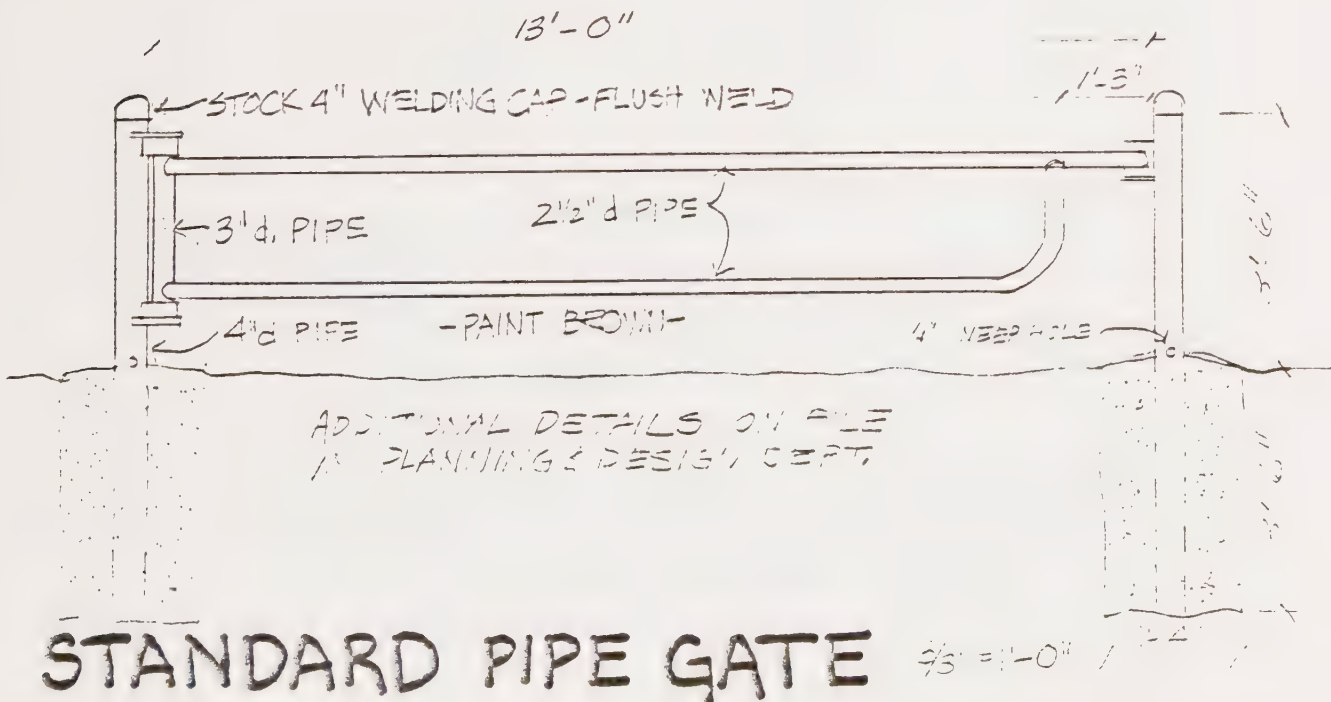
CULVERT USED WITH INSLOPE &
LEAD DITCHES

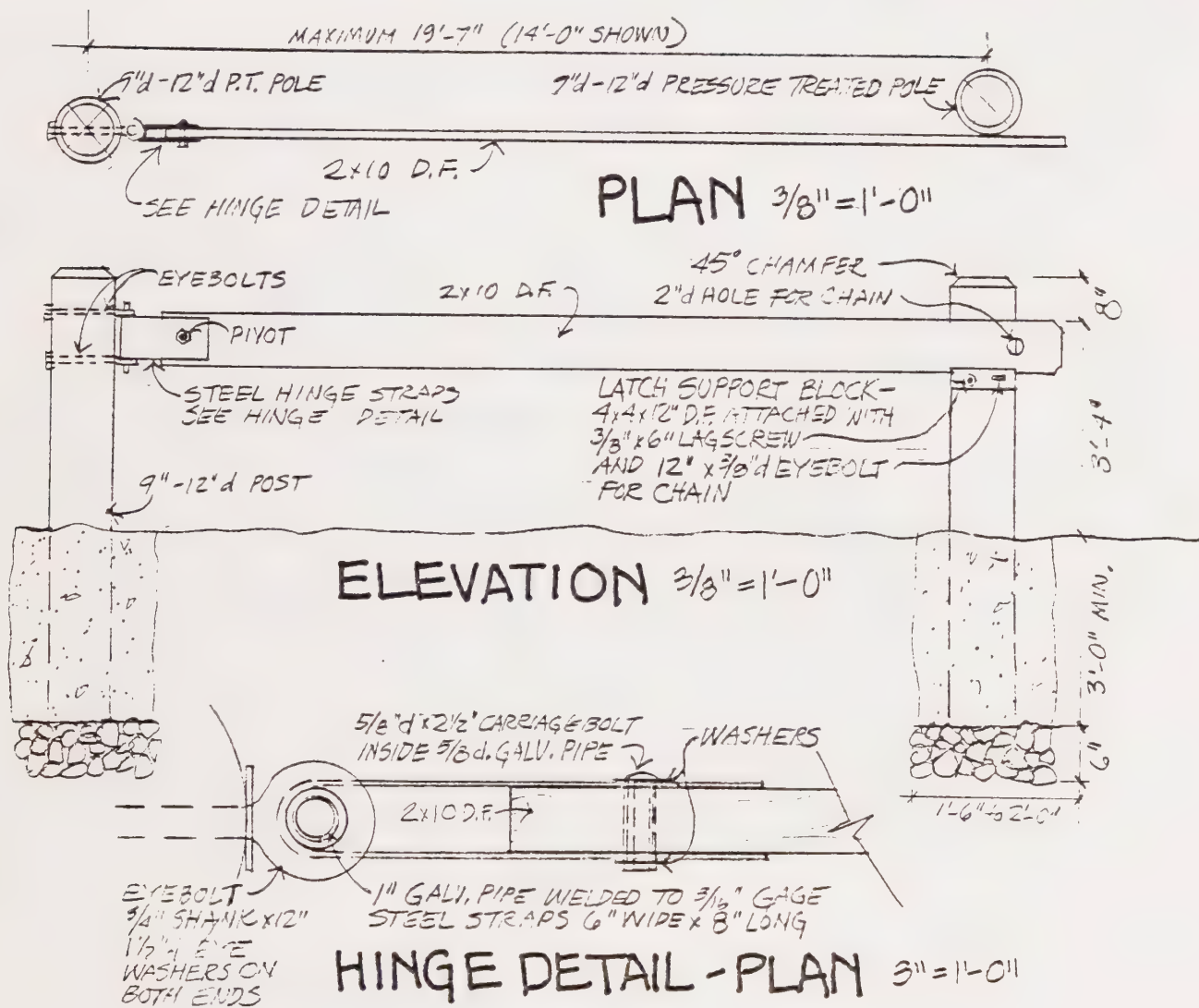
8. Surfacing: The trail may be treated or surfaced in areas where: the dust caused by trail use presents a problem; it is needed to prevent erosion; or it is needed to improve slick or muddy conditions. The color and type of material chosen for surfacing, whether it be bark, gravel, etc., shall be compatible with the environment through which the trail passes. The surfacing material must not create severe erosion or runoff problems.

Annual grading or scraping should be avoided and gravel surfacing or annual burning or grassmowing will be substituted for grading where possible.

Some service roads will require paving. Some bicycle trails which are paved will also be used as service trails. The sections of Surfacing and Surface Drainage in the Bicycle Trail Design section are applicable.

9. Structures: Structures may include culverts, retaining walls, bridges, etc. If possible, structures should be avoided because of their high installation and maintenance costs. Ideally, trail structures should be built using on-site materials or imported materials which blend into the environment. They should be designed so that they are harmonious with the surroundings. Structures should be as vandal-proof as possible. Use recessed bolt heads wherever possible. Drawings for structures are not shown here, as they should be designed on an individual basis.
10. Gates: Gates on service trails should be a minimum of 12' wide and preferably 14'. This allows plenty of space for large vehicles, such as fire trucks. Gates on service trails may be of wood or metal; wood blends more naturally with the environment but metal is more durable. Vehicle gates near roads should be signed to prevent parking, and should be reflectorized. All vehicle gates should be securely locked. The drawings show standard types of vehicle gates.





STANDARD WOOD GATE

FOR USE IN NON-CATTLE AREAS

11. Environmental Consideration: Disturbance of the surrounding environment should be kept to a minimum and should not extend further than the immediate project area. Also, cuts and fills should be kept to a minimum. In many instances, either new landscaping or clearing would be desirable. Landscaping can be used for stabilizing slopes, creating physical or visual barriers, or providing shade. Clearing may be advisable for opening up views, creating rest areas, removing unwanted plants, or increasing sight distance.
12. Needs of Handicapped: See page 44.

DESIGN STANDARDS:

Signing

The following guidelines show examples of signs which may be used on Regional Trails. Each signing situation should be evaluated individually; it is difficult to make generalizations. The Planning and Design Department will be writing a more detailed signing manual which will set up definite standards for types of signs to be used in the District. Each sign design shall be processed through and approved by the Planning and Design Department prior to manufacture.

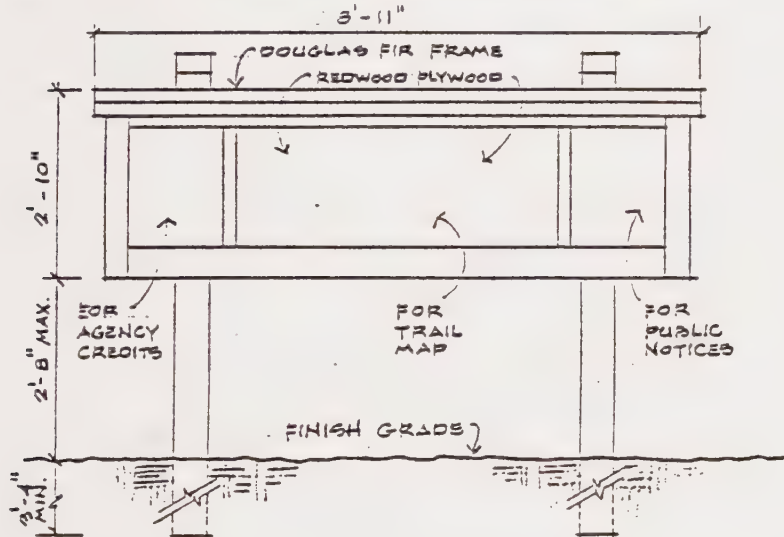
1. Materials: Wooden signs are most commonly used on parkland and Regional trails as they are most compatible with the natural environment and are economical to manufacture and maintain. There are two cases where metal signs might be used: one, where vandalism is a problem; two, in interfaces with public roadways, where standard metal highway signs are used.
2. Colors: Wooden signs are normally brown with white lettering. Other earth tones may be used on occasion; there must be enough contrast between the background and the letters for the signs to be legible. Highway sign colors are set in the Manual on Uniform Traffic Control Devices (MUTCD) and may also be copied for trail signing. In standard highway signing, red is used for stop signs and prohibitions; yellow is for warning; green, movement premitted, directional guidance; blue, services; black and white, regulation; and orange, construction and maintenance warning.
3. Size: Blank signboards stocked in the District sign shop are 15" x 15", 18" x 30", 6" x 15", and 9" circle. Most signs for trails should be made to fit one of these stock sizes. Highway sign sizes are standardized, and are found in the MUTCD.
4. Location: Signs should be located to be easily read from the trail; on bicycle trails and routes, signing should be placed to provide safe stopping or turning distance. (See Bicycle Trails Design Standards: Sight Distance.) Height of signs should be determined by vegetation and other surroundings, but normally, 40" from ground to bottom of a single sign, and 36" from ground to bottom of a double sign is a good rule. On paved bicycle trails, sign messages may be painted onto the pavement, rather than or in addition to a sign on a post. On a bicycle trail or route on a street, signs should be placed back of the shoulder, providing at least a two-foot clear shoulder adjacent to the trail or route.

Signing should be consolidated wherever possible; it is preferable to have one sign with three messages than three signs on three separate posts with three separate messages. However, types of signs should not be mixed; warning or regulatory signs especially should not be mixed with other types.

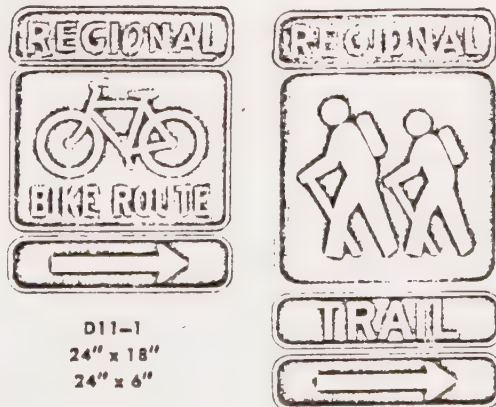
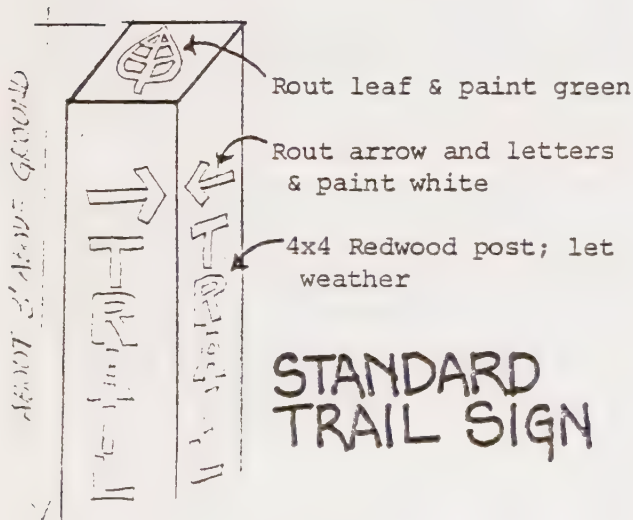
Highway signing location and height is established and can be found in the Manual on Uniform Traffic Control Devices (MUTCD) and the California Highway Design Manual.

5. Types of Signs:

- a. **Trailhead Signs:** These signs will be placed at all trailheads and should include the following information: The name of the trail, a location map of the trail and its vicinity, destinations, distances, trail rules, and other information. This sign may be rather large and detailed. A standard format is shown below.



- b. **Directional Signs:** Directional signs should be used at intersections with roads or other trails, where paths could be confused. Avoid using too many directional signs. On riding and hiking trails, the standard directional sign is a 4x4 redwood post with arrows and other information routed in. The other two directional signs shown are to be used on roadways; one is the standard Bike Route sign, which has the word "Regional" added, and could have additional destination information; the other is a trail sign which could be used where a trail crosses a roadway.

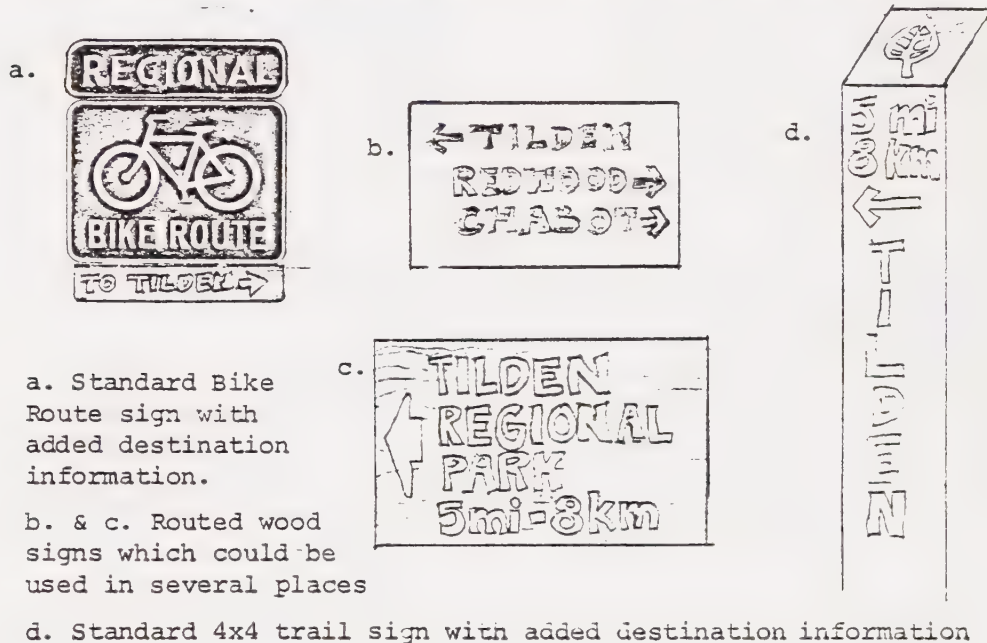


See also the M.U.T.C.D. for instructions on placement and use.

- c. **Destination Signs:** Destination signs will be placed at appropriate locations to inform trail users of the distance and destinations on various routes. These signs should be accompanied by directional arrows where confusion with other routes is possible. On many trails, the destination information given on the trail head plaque is sufficient.

On-street bike routes may have two types of destination signs: a strip added below the standard Bike Route sign, saying "To . . .", or a separate sign with more than one destination. The second type should be made large enough that motorists can be guided by it as well.

Distances on destination signs will be given in miles and kilometers.



- a. Standard Bike Route sign with added destination information.
- b. & c. Routed wood signs which could be used in several places
- d. Standard 4x4 trail sign with added destination information
- d. **Warning Signs:** Warning signs are required on trails to warn trail users of hazardous conditions on the trail, and to warn both trail users and motorists of locations where a trail crosses a roadway.

Signing on trails should be placed far enough in advance of the hazard that the trail user has time to slow down and maneuver. This is very important on bicycle trails, especially due to the speed involved. Sight distances required for stopping at various speeds are given the "Bicycle Trails Design Standards" section. Generally, bicycle trails should be designed for 20 mph speeds, which means that the warning signs should be 120 feet ahead of the hazard. On paved bicycle trails, warnings should be painted on the pavement, as well as signed. A 2 foot wide clear shoulder should be maintained along the edge of a bicycle trail; if structures protrude into this shoulder area, they should be made more visible to the cyclists by painting them white or yellow.

A 4" x 4" yellow metal reflector is available in the sign shop (007-code number) for use on gates, bollards, and other obstructions to make them more visible. This is most important on or near vehicle access roads where night visibility is essential.



W3-1



W3-2

30"x30" is standard size of these signs to be used on roadways; a 15"x15" size can be used on bike trails.

TYPICAL WARNING SIGNS FOR TRAIL-ROADWAY INTERSECTIONS

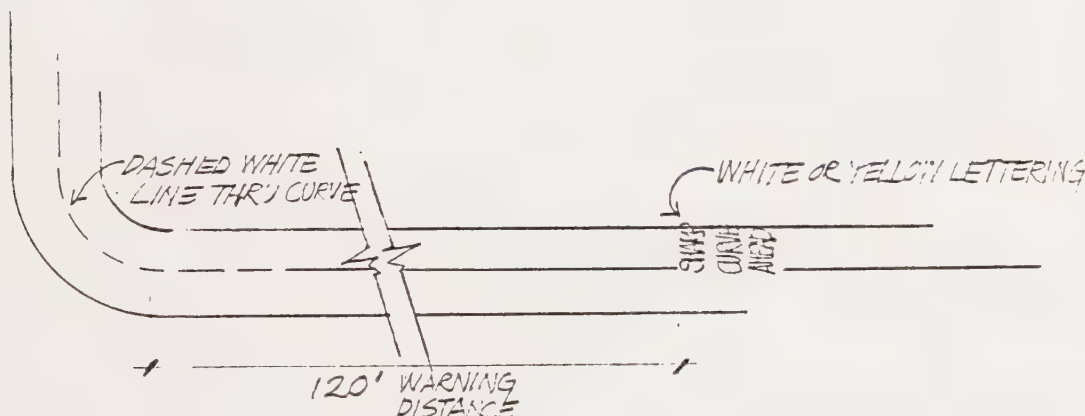


W11-1



W11-2

To be used on roadways to warn motorists of trail crossing. "Horse Crossing" logo also available.



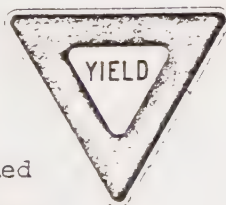
TYPICAL WARNING MARKINGS FOR BIKEPATHS

May be used alone or in conjunction with signing.

- e. Regulatory Signs: STOP and YIELD signs are the most commonly used regulatory signs. These are shown below; these standard signs may be used in a scaled down version where a trail crosses a road. Other regulatory signs which may be used on trails include prohibitions such as "No Dogs" or "No Smoking", or the "No Parking" sign shown below.



R1-1



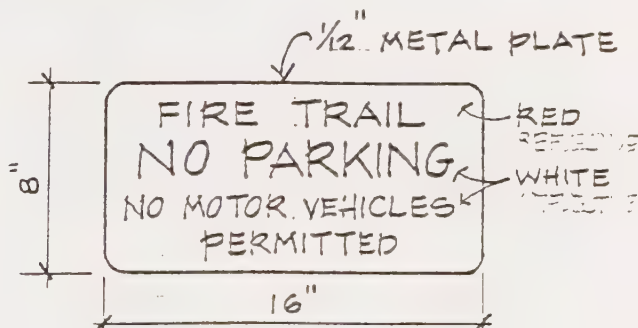
R1-2

Red
White

24"x24" or
18"x18"

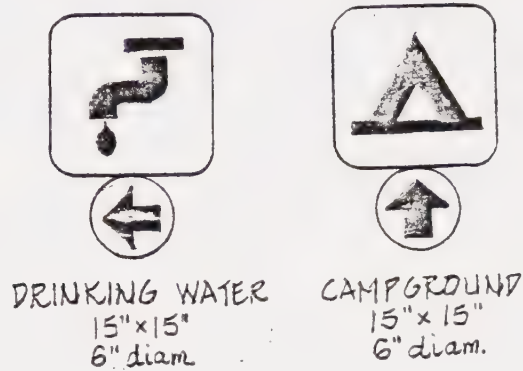
36"x36"x36" or
18"x18"x18"

For roadway or trail use.

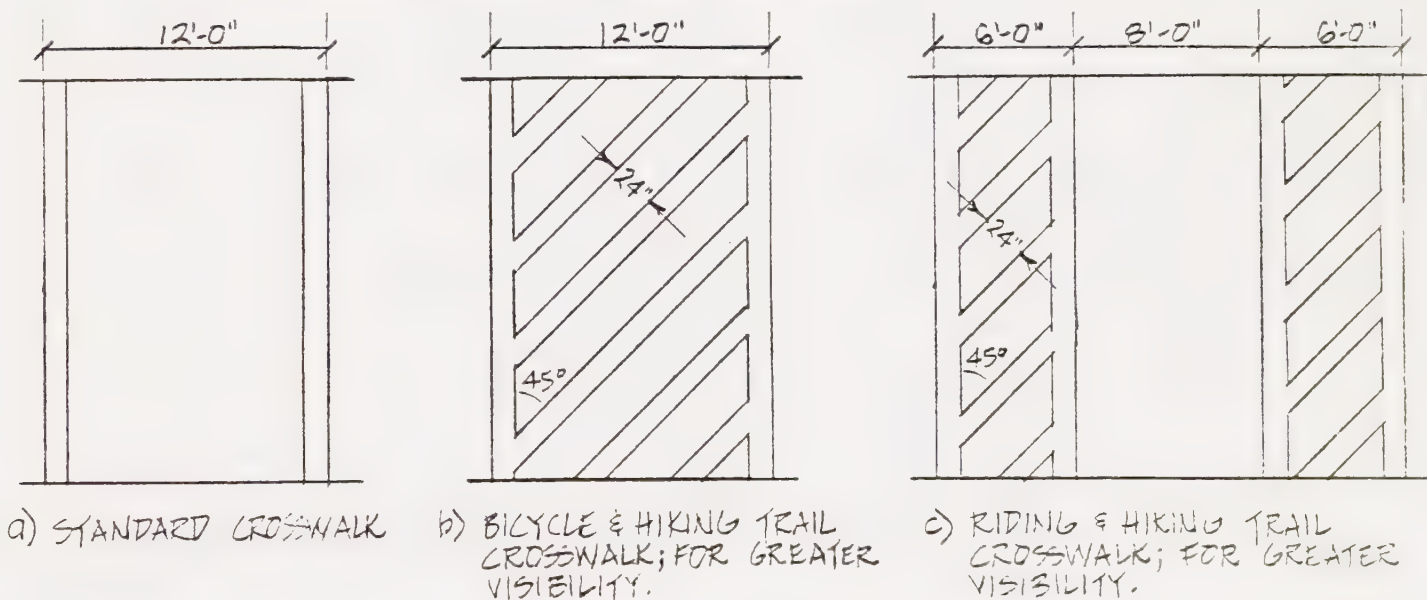


This is a standard sign which should be installed on all fire trail gates. Additional reflectors may be desirable on some gates, where night visibility is essential.

- f. Informational Signs: This type of sign may be mileage markers or may point out the location of water, telephone, emergency services, rest areas, etc.



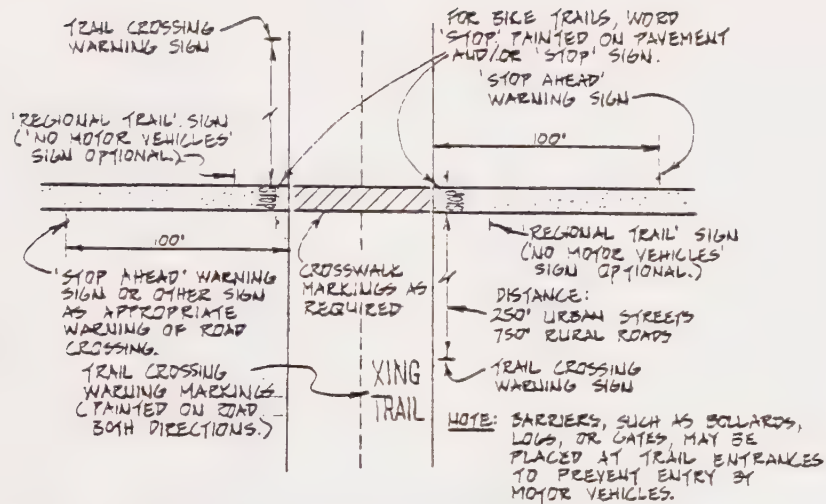
- g. Intersection Design: Warning both the trail users and motorists of intersections should be evaluated individually; some will require considerably more warning and regulation than other intersections. Signing for motorists is set forth in the MUTCD; scaled down versions of the motorist signs may also be used on trails. (Especially STOP and YIELD signs.) Depending on quantity and speed of both trail and street traffic, a determination should be made as to which route has the right of way; in very low volume streets, the trail may carry considerably more traffic than the street, and the trail may have the right of way. Specific intersections will be designed in cooperation with the traffic engineer of the city or county involved. Diagrams of typical intersection design are shown.



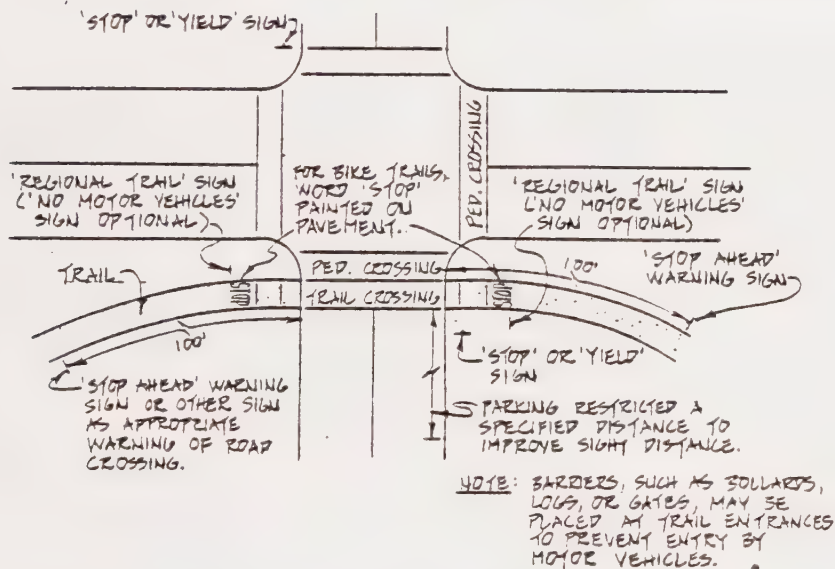
NOTES: STRIPING TO BE WHITE, 12" IN WIDTH.

VARIOUS CROSSWALKS

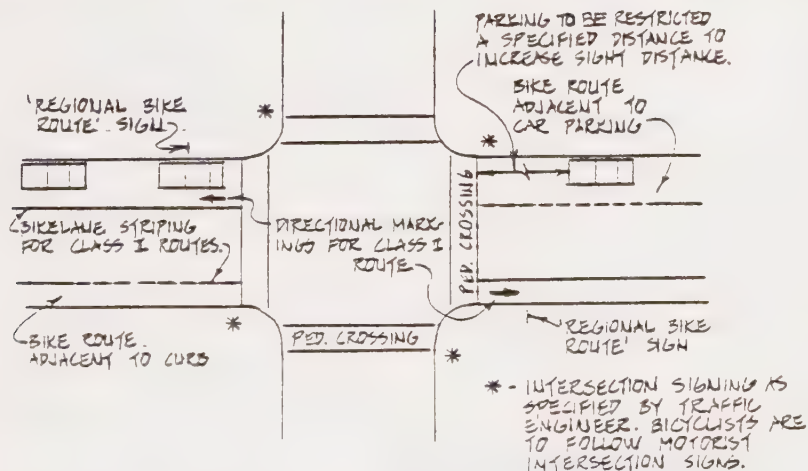
USE b) & c) ON HIGHER SPEED ROADS, SUCH AS RURAL ROADS, AND FOR MID-BLOCK CROSSINGS.



TYPICAL SIGNING-TRAIL CROSSING AT MID-BLOCK



TYPICAL SIGNING-TRAIL CROSSING AT INTERSECTION



TYPICAL SIGNING-ON STREET BIKE ROUTE CROSSING

DESIGN STANDARDS:

Trail Related Facilities

A. STAGING AREAS FOR REGIONAL TRAILS

Staging areas should be large enough to accommodate the amount and type of traffic the trail demands. If a trail is used only by small groups of hikers, a staging area to hold a half-dozen cars may be adequate. If the trail receives heavy use by large groups of horsemen, a staging area to accommodate up to 50 trucks and trailers may be considered. Staging areas should not duplicate existing facilities; where there is an existing parking area, it should be used. Facilities which should be provided at staging areas include trail signs, toilets, water, and garbage cans. The staging area may include many other types of facilities, if appropriate for the area, and the staging area may be simply part of an existing parkland. Establishment of isolated staging areas should be avoided, as they generally are more difficult to maintain. Staging areas should be located at the beginning and ending of each trail (trails which form accesses to parks from residential areas excluded) and may be provided along the trail route. Generally, staging areas at 10-mile intervals are adequate; they may be closer than that if: the trail is used primarily by hikers; shorter segments of the trail are especially desirable as day use trails; certain areas of the trail are especially scenic and generate additional traffic; or any place the use seems to demand additional staging.

B. OVERNIGHT CAMPING

"The District will provide overnight camping facilities, including overnight stops on continuous hikes, for organized groups as well as for individuals. Camping facilities will be minimally developed, with special attention given to problems of health, safety, protection of the environment in accordance with the resource analysis, and management considerations required by the specific parkland in which camping facilities are provided."

-- "Recreation Policies: Camping Policy,"
EBRPD Master Plan, Page 31.

"The District will, in general, not favor the development and operation of hostels on parklands, but will encourage the locating of such hosteling facilities on lands adjacent to parklands. However, if buildings are acquired as part of a new parkland acquisition or if they are situated on existing parklands, they may be considered for hostel use if appropriate."

-- "Recreation Policies: Hostels Policy,"
EBRPD Master Plan, Page 32.

Parks which will be connected by Regional Trails will require overnight accommodations for the users of these long-distance trails. These sites should be usable by hikers and equestrians, and some will be used by bicyclists. Facilities for large and small groups must be provided at each of the parks so designated on the Regional Trails Plan. The specific site location of these camps will be determined in the Land Use-Development Plan for each of the parks. Three types of facilities may be developed: Trail Camps, Group Camps, and Hostels.

1. TRAIL CAMPS

These camps are designed for trail users travelling in small (less than eight) groups, by foot, horse, or bicycle. The sites chosen for this type of camp should be accessible by service vehicle, but away from the heavily used areas of the park. They should be near to the Regional Trail(s) they serve, and separate from auto-oriented camping areas.

The size of the site may vary, but an acre is ample. Each site should accommodate horses; areas reserved for horses should be separated from cooking and sleeping areas, but within sight of the riders. Facilities will include potable water, chemical toilets, and hitching rails. A shelter may be provided. No garbage cans will be provided, as campers will be asked to carry out what they carry in. No open fires will be permitted; only camping stoves may be used.

The camps will be open by reservation seven days a week except during periods when trails are not usable due to extremely rainy weather, or when fire hazard is high.

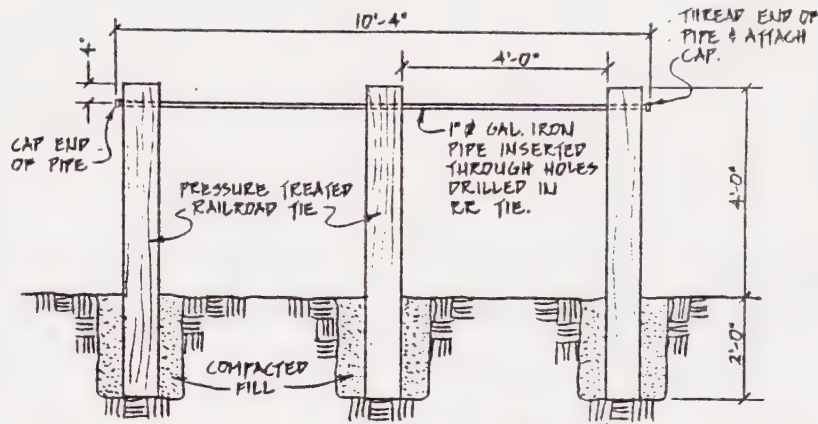
2. GROUP CAMPS

Some trail users, especially horsemen, enjoy travelling in large groups and will require large camp facilities. Large group trail camps will be designed to accommodate up to 100 riders, hikers, or bicyclists, and will be designed so that a variety of groups can use them.

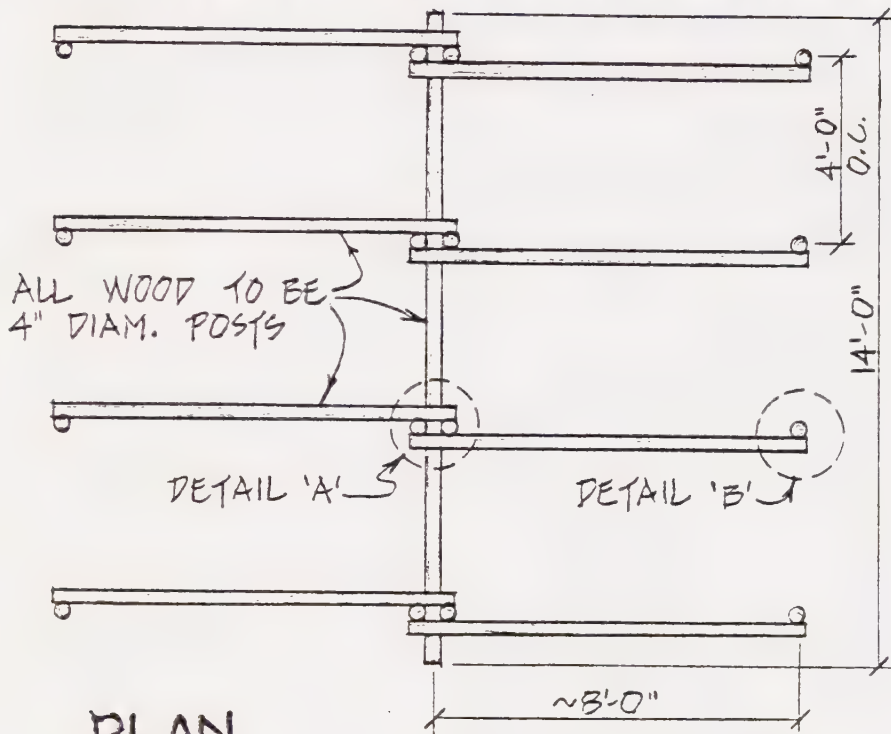
Many group camps are now available in the Regional Parks. During the preparation of the Land Use-Development Plan for each park, needs for new or different group camps will be considered.

All large group camps are available year-round by reservation to organized youth and adult groups. Wood fires are permitted at group camps where appropriate fire circles exist. No more than two vehicles are allowed at the site.

Sites for large group use need good road access. Very often, large groups bring in supplies by vehicle. Other facilities to be provided include a large central barbeque pit, chemical toilets, garbage cans, hitching rails, and potable water. Water should be available as close to the hitching rails as possible. A shelter may be provided.

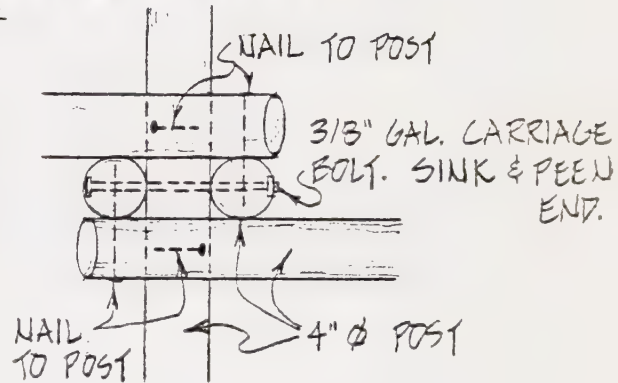


R.R. TIE & PIPE HITCHING RAIL

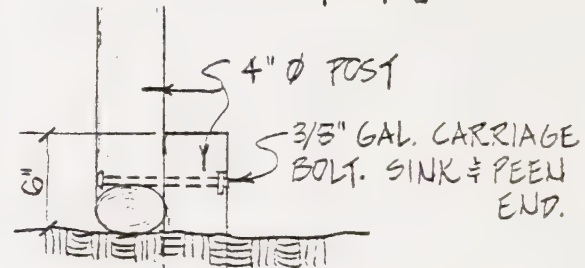


ALL WOOD TO BE
4" DIAM. POSTS

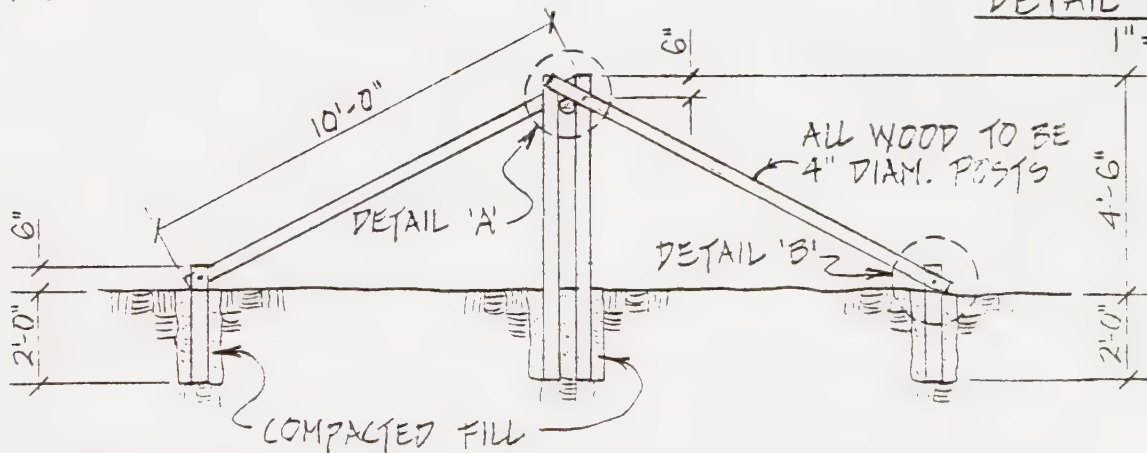
PLAN
1/4" = 1'-0"



DETAIL 'A'
1" = 1'-0"



DETAIL 'B'
1" = 1'-0"



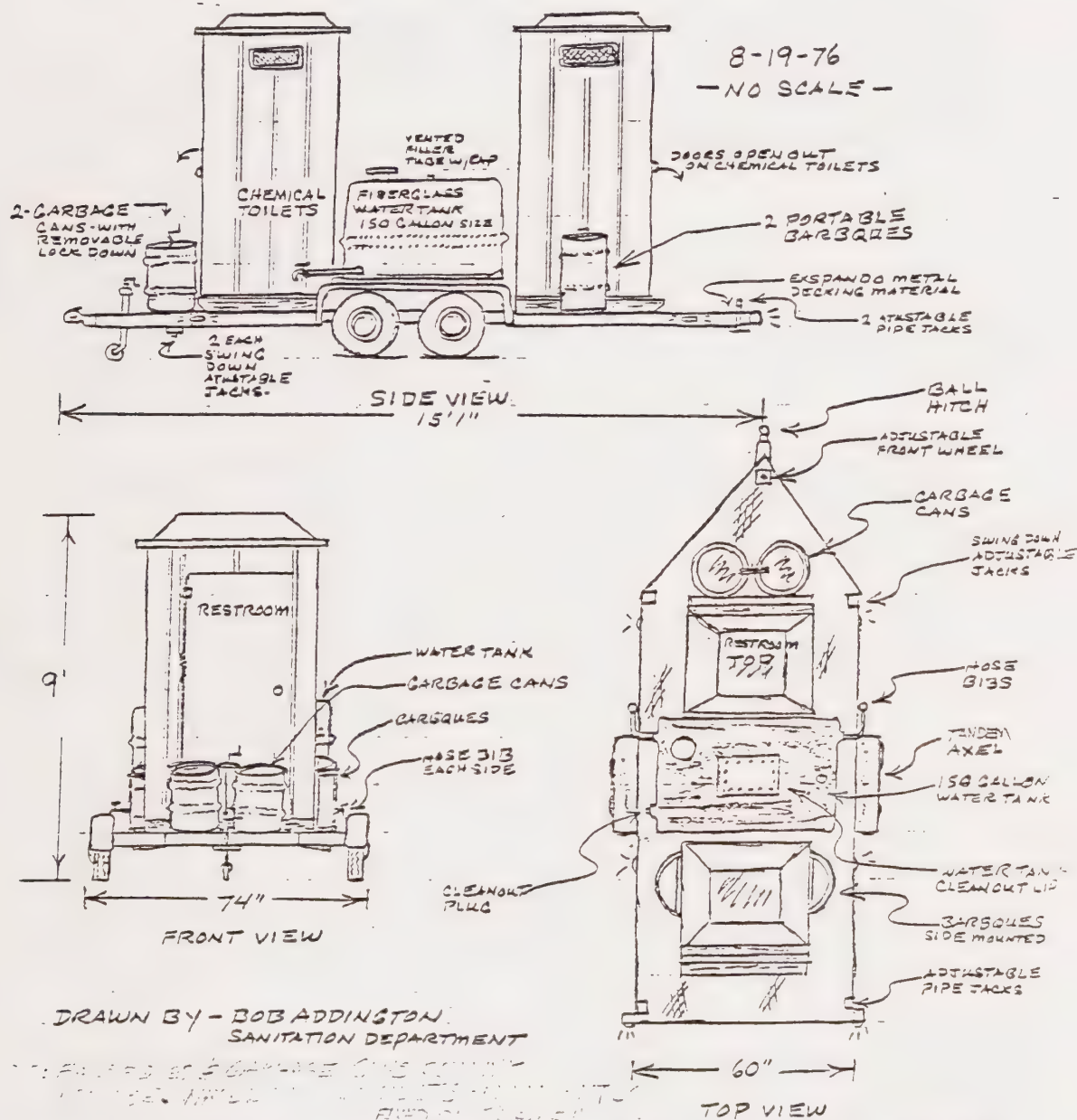
ALL WOOD TO BE
4" DIAM. POSTS

ELEVATION
1/4" = 1'-0"

WOOD POST HITCHING RAIL

3. TEMPORARY GROUP CAMP SITES

Until additional permanent group sites are provided, or when existing group sites are filled, a group may reserve the use of a portable trailer which contains water, portable barbeques, toilets and garbage cans. This trailer may be used at sites in the park which have no permanent camping facilities, with the permission of the park supervisor.



PROTOTYPE "SANITATION TRAILER"

This has proved to be a little small for large equestrian groups, so a second, larger and heavier-duty trailer is under construction.

4. HOSTELS

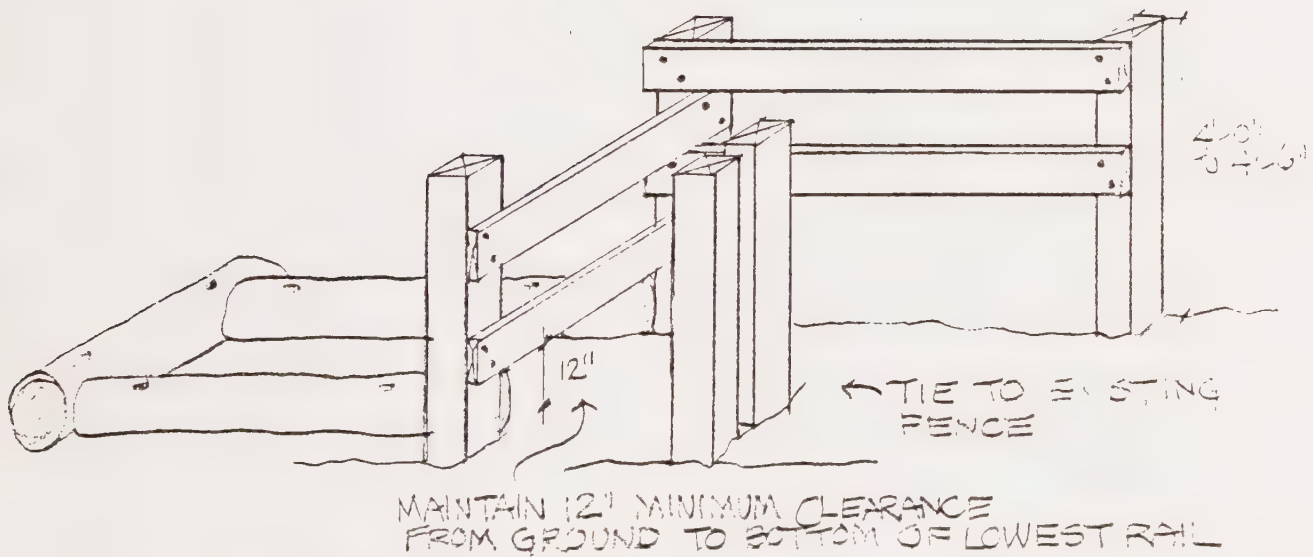
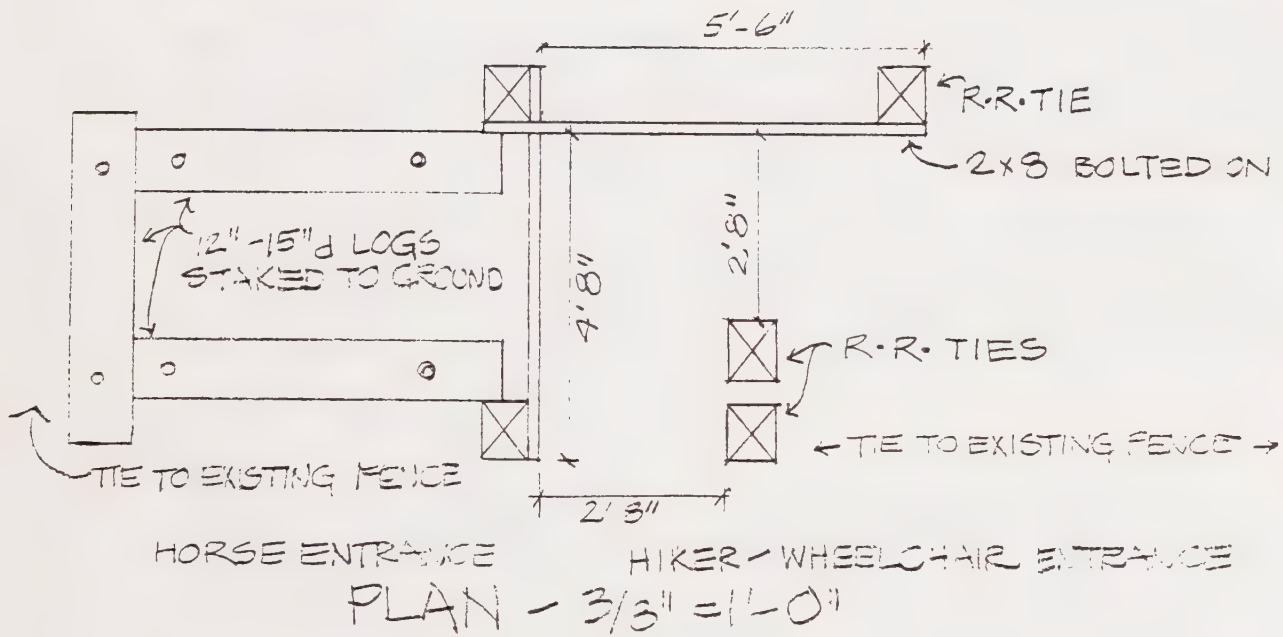
A hostel is a developed overnight accommodation consisting of a building or buildings with sleeping areas and food preparation areas. These accommodations are usually supervised and intended for travelling youths and families. Hostels are expensive to develop, maintain, and operate compared to campsites. The District's Master Plan policy on hostels is:

"The District will, in general, not favor the development and operation of hostels on parklands but will encourage the locating of such hosteling facilities on lands adjacent to parklands. However, if buildings are acquired as part of a new parkland acquisition or if they are situated on existing parklands, they may be considered for hostel use if appropriate."

-- "Recreation Policies: Hostels Policy,"
EBRPD Master Plan, Page 32.

No specific hostel sites are shown on the Regional Trails Plan. As each Land-Use Development Plan is done, evaluation of possible hostel use in existing structures will be considered. Because the Regional Trails System is fairly new, the District's first priority will be the development of camping sites integral to the use of the long-distance trails. Development of hostels will proceed after experience with campsites has been acquired, when buildings and funds are available, and after the Regional Trails are in operation.

Addendum



PERSPECTIVE

MOTORCYCLE BARRIER WHICH
ALLOWS TRAIL USER & WHEELCHAIR
ACCESS

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Appendix

TRAIL USER GROUPS IN THE EAST BAY

General

Sierra Club, Bay Chapter
5608 College Avenue
Oakland, CA 94618

Center for Independent Living
2539 Telegraph Avenue
Berkeley, CA 94704

East Bay Area Trails Council
c/o East Bay Regional Park Dist.
11500 Skyline Boulevard
Oakland, CA 94619

Sierra Club, Mt. Diablo Regional Group
Livermore-Amador Group
5608 College Avenue
Oakland, CA 94618

Hiking Clubs

Berkeley Hiking Club
P.O. Box 147
Berkeley, CA 94701

Contra Costa Hills Club
306 - 40th Street
Oakland, CA 94609

Hayward Hiking Club
c/o Hayward Area Park & Rec. Dist.
1099 E Street
Hayward, CA 94543

Diablo Hiking Club
c/o Pleasant Hill Park & Rec. Dist.
147 Gregory Lane
Pleasant Hill, CA 94523

Girl Scouts
San Francisco Bay Council
670 McCormick Street
San Leandro, CA 94577

Boy Scouts
San Francisco Bay Council
8480 Enterprise Way
Oakland, CA 94621

Camp Fire Girls
Alameda-Contra Costa Council
1207 East 14th Street
Oakland, CA 94606

Bicycling

East Bay Bicycle Coalition
P.O. Box 23934
Oakland, CA 94623

Grizzly Peak Cyclists
P.O. Box 9308
Berkeley, CA 94709

Diablo Wheelmen
P.O. Box 5095
Concord, CA 94524

Fremont Freewheelers
P.O. Box 1089
Fremont, CA 94538

Valley Spokesmen
P.O. Box 2630
Dublin, CA 94556

Equestrian Clubs

Asociacion de Charros Los Costenos
Martin Guzman, President
257 Mildred Avenue
Pittsburg, CA 94596

Asn. de Charros Camperos Del Valle
Ruben Uriarte, Secretary
263 Tippicanoe
Hayward, CA 94544

Bayview Horsemen's Association
P.O. Box 868
El Sobrante, CA 94803

California Equestriennes
P.O. Box 472
Milpitas, CA 95035

Calif. State Horsemen's Assn.,
Region 5
P.O. Box 1179
Santa Rosa, CA 95402

Castro Valley Horsemen's Assn.
P.O. Box 2001
Castro Valley, CA 94546

Charros De Tormey
719 2nd Street
Rodeo, CA 94572

Clayton Horsemen's Association
P.O. Box 28
Clayton, CA 94517

Concord-Mt. Diablo Trail Ride Assn.
P.O. Box 486
Concord, CA 94520

Contra Costa Co. Horsemen's Assn.
3119 Grant Street
Concord, CA 94520

Contra Costa Co. Sheriff's Posse
P.O. Box 4809
Walnut Creek, CA 94596

Contra Costa Riders
1330 Castle Rock Road
Walnut Creek, CA 94598

Delta Horsemen's Association
P.O. Box 294
Antioch, CA 94509

Eden Colts
P.O. Box 96
Fremont, CA 94538

Equestrian Center of Walnut Creek
P.O. Box 4303
Walnut Creek, CA 94596

Hayward Horsemen's Association
P.O. Box 3065
Hayward, CA 94540

Lafayette Horsemen's Association
Mrs. Nancy Bartman
1661 Castle Hill Road
Walnut Creek, CA 94595

Los Caballeros Saddle Club
293 Castle Hill Ranch Road
Walnut Creek, CA 94595

Martinez Horsemen's Association
P.O. Box 2146
Martinez, CA 94553

Metropolitan Horsemen's Association
P.O. Box 2724
Oakland, CA 94602

Moraga Horsemen's Association
P.O. Box 14
Moraga, CA 94556

Orinda Horsemen's Association
28 Norwood Drive
Kensington, CA 94707

San Ramon Valley Horsemen's Association
P.O. Box 403
Danville, CA 94526

Tilden-Wildcat Horsemen's Association
1020 Middlefield Road
Berkeley, CA 94708

Tri-Cities Horsemen's Association
P.O. Box 124
San Pablo, CA 94806

Index

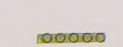
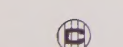
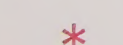
- Acquisition of Rights of Way, 10, 21-22
- Acquisition Evaluation, def. 1; 7, 10, 11
- Barriers, 37, 39, 43, 47, 66
- Bike Routes and Trails, def. 1
 - Construction procedures, 13
 - Construction standards, 40-47
 - Design procedures, 12
 - Funding of, 12
 - Maintenance procedures, 14
 - Operations of, 17-18
 - Planning of, 7-11, 23-25
- Board, def. 1
- Bollards, 43. See also Barriers.
- Bridges, 31, 39, 43, 47
- California Environmental Quality Act (CEQA), def. 1; 7, 8
- Camping, 17-18, 61-65
- Capital Improvements Plan, def. 1; 9, 11
- Closure of Trails, 13
- Complaints, 18
- Construction
 - Procedures, 10
 - Standards, 21-65
- Coordination with Other Agencies, 18
- Corridor Study, 10
- Crosswalks, 59-60
- Culverts, 30, 50, 57
- Curvature, 40-41, 45, 48
- Design, 12, 21-60
- Drainage, 30, 42, 45, 50, 51
- East Bay Area Trails Council (EBATC), def. 1; 10
- East Bay Bicycle Coalition (EBBC), def. 1; 10
- Environmental Impact Report (EIR), def. 2; 8, 10. See also CEQA.
- Environmental Review Manual, 2, 8, 11
- Equestrian Trails. See Hiking and Riding Trails.
- Fences, 32-34, 43
- Flagging, 26
- Funding, 12
- Gates, 32, 34-36, 52-54
- Grades, 26, 40, 45, 48
- Group Camps, 62
- Handicapped, 18, 44, 54, 66
- Hiking Trails, def. 2
- Hiking and Riding Trails
 - Construction procedures, 13
 - Construction standards, 26-39
 - Design procedures, 12
 - Funding of, 12
 - Maintenance of, 14
 - Operations of, 17-18
 - Planning of, 7-11, 21-23
- Hitching Rails, 63
- Hostels, 65
- Intersections, 44, 47, 59-60
- Land Use-Development Plan (LUDP), def. 2; 8, 10
- Maintenance, 14-15
- Negative Declaration, def. 2; 11. See also CEQA.
- Park Advisory Committee (PAC), def. 2
- Parkland Trails, def. 2
 - Construction of, 13
 - Design of, 12, 21-60
 - Funding of, 12
 - Planning of, 7-9
- Pruning, 28-29, 49

Public Hearings, 8, 10
Public Relations, 17
Public Safety, 17
Regional Trails, def. 2-3
 Construction of, 13
 Criteria for, 3
 Design standards, 12, 21-60
 Planning of, 9-11
 Right of way for, 21-25
 Route choice, 22-33
Resource Analysis, def. 2; 7, 10
Rest Areas, 4. See also Staging Areas.
Reservations, 17, 61-62
Rights of Way, 21-25
 Types of Agreements, 21
 Width Standards, 21
Sanitation Trailer, 64
Service Trails, def. 2
 Construction standards, 48-54
Sight Distance, 40
Signing, 55-60
Staging Area, def. 2; 3, 61
Steps, 27
Stiles, 37-38
Surfacing
 Hiking and riding trails, 31
 Bicycle trails, 41, 45
 Service trails, 52
Trail Camps, 62
Trail Corridor, 3
Trailhead, 4. See also Staging Area.
Trail Link, 3
Tread Construction, 26-29, 48-49

Width
 Hiking trails, 26, 29
 Hiking and riding trails, 26, 29
 Bike trails, 42-43
 Bike routes, 46-47
 Service trails, 48
 Regional trails rights of way, 21

EAST BAY REGIONAL PARK DISTRICT
Schematic
REGIONAL TRAILS PLAN

EXISTING PROPOSED

-   CLASS I BIKE ROUTE (OFF-ROAD)
-   CLASS II & III BIKE ROUTES (ON-ROAD)
-   HIKING & RIDING TRAIL
-   HIKING ONLY TRAIL
-   OVERNIGHT CAMPING
-  BART STATION
-  EBRPD PARKLANDS
-  OTHER PARKS/OPEN SPACE
-  EBRPD BOUNDARY



ADOPTED: OCTOBER, 1976



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December, 1976